

# 中华人民共和国农业行业标准

NY/T 33—2004  
代替 NY/T 33—1986

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## 鸡 饲 养 标 准

Feeding standard of chicken

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中华人民共和国农业部 发布

## 前 言

本标准代替 NY/T 33—1986。

本标准由中华人民共和国农业部提出并归口。

本标准主要起草单位：中国农业科学院畜牧研究所、中国农业科学院饲料研究所、中国农业大学动物科技学院、广东省农业科学院畜牧研究所、山东省农业科学院家禽研究所。

本标准主要起草人：文杰、蔡辉益、吕于明、齐广海、陈继兰、张桂芝、刘国华、熊本海、苏基双、计成、刁其玉、刘汉林。

# 鸡饲养标准

## 1 范围

本标准适用于专业化养鸡场和配合饲料厂。蛋用鸡营养需要适用于轻型和中型蛋鸡,肉用鸡营养需要适用于专门化培育的品系,黄羽肉鸡营养需要适用于地方品种和地方品种的杂交种。

## 2 规范性引用文件

下列文件中的条款通过本标准的引用而成为本标准的条款。凡是注日期的引用文件,其随后所有的修改单(不包括勘误的内容)或修订版均不适用于本标准,然而,鼓励根据本标准达成协议的各方研究是否可使用这些文件的最新版本。凡是不注日期的引用文件,其最新版本适用于本标准。

- GB/T 6432 饲料中粗蛋白质含量的测定
- GB/T 6433 饲料中粗脂肪含量的测定
- GB/T 6435 饲料中水分及干物质含量的测定
- GB/T 6436 饲料中钙含量的测定
- GB/T 6437 饲料中总磷含量的测定
- GB/T 10647 饲料工业通用术语
- GB/T 15400 饲料中氨基酸含量的测定

## 3 术语和定义

下列术语和定义适用于本标准。

### 3.1

**蛋用鸡 layer**

人工饲养的、用于生产供人类食用蛋的鸡种。

### 3.2

**肉用鸡 meat-type chicken**

人工饲养的、用于供人类食肉的鸡种。这里指专门化培育品系肉鸡。

### 3.3

**黄羽肉鸡 Chinese color-feathered chicken**

指《中国家禽品种志》及省、市、自治区地方《畜禽品种志》所列的地方品种鸡,同时还含有这些地方品种鸡血缘的培育品系、配套系鸡种,包括黄羽、红羽、褐羽、黑羽、白羽等羽色。

### 3.4

**代谢能 metabolizable energy**

食入饲料的总能减去粪、尿排泄物中的总能即为代谢能,也称表观代谢能,英文简写为 AME。以兆焦或兆卡表示。

蛋白能量比 CP/ME:每兆焦或每千卡饲料代谢能所含粗蛋白的克数。

赖氨酸能量比 Lys/ME:每兆焦或每千卡饲料代谢能所含赖氨酸的克数。

### 3.5

**粗蛋白质 crude protein**

粗蛋白质包括真蛋白质和非蛋白质含氮化合物,英文简写为 CP。无论饲养标准还是饲料成分表中

的蛋白质含量,都由含氮量乘以 6.25 而来。

### 3.6

#### 表观可利用氨基酸 apparent available amino acids

食入饲料的氨基酸减去粪尿中排泄的氨基酸即为表观可利用氨基酸。氨基酸表观利用率(AAAA%)的计算公式为式(1):

$$\text{AAAA \%} = \frac{\text{饲料中氨基酸} - \text{粪尿中氨基酸}}{\text{饲料中氨基酸}} \times 100 \quad \dots\dots\dots (1)$$

### 3.7

#### 非植酸磷 nonphytate P

饲料中不与植酸成结合态的磷,即总磷减去植酸磷。

### 3.8

#### 必需矿物质元素 mineral

饲料或动物组织中的无机元素为矿物质元素,以百分数(%)表示者为常量元素,用毫克/千克(mg/kg)表示者为微量元素。

### 3.9

#### 维生素 vitamin

维生素是一族化学结构不同、营养作用和生理功能各异的有机化合物。维生素既非供能物质,也非动物的结构成分。主要用于控制和调节物质代谢。以国际单位(IU)或毫克(mg)表示。

## 4 鸡的营养需要

### 4.1 蛋用鸡的营养需要

生长蛋鸡、产蛋鸡的营养需要见表 1 和表 2。生长蛋鸡体重与耗料量见表 3。

表 1 生长蛋鸡营养需要

Table 1 Nutrient Requirements of Immature Egg-Type Chickens

| 营养指标<br>Nutrient   | 单位<br>Unit     | 0 周龄~8 周龄<br>0wks~8wks | 9 周龄~18 周龄<br>9wks~18wks | 19 周龄~开产<br>19wks~onset of lay |
|--------------------|----------------|------------------------|--------------------------|--------------------------------|
| 代谢能 ME             | MJ/kg(Mcal/kg) | 11.91(2.85)            | 11.70(2.80)              | 11.50(2.75)                    |
| 粗蛋白质 CP            | %              | 19.0                   | 15.5                     | 17.0                           |
| 蛋白能量比 CP/ME        | g/MJ(g/Mcal)   | 15.95(66.67)           | 13.25(55.30)             | 14.78(61.82)                   |
| 赖氨酸能量比 Lys/ME      | g/MJ(g/Mcal)   | 0.84(3.51)             | 0.58(2.43)               | 0.61(2.55)                     |
| 赖氨酸 Lys            | %              | 1.00                   | 0.68                     | 0.70                           |
| 蛋氨酸 Met            | %              | 0.37                   | 0.27                     | 0.34                           |
| 蛋氨酸+胱氨酸 Met + Cys  | %              | 0.74                   | 0.55                     | 0.64                           |
| 苏氨酸 Thr            | %              | 0.66                   | 0.55                     | 0.62                           |
| 色氨酸 Trp            | %              | 0.20                   | 0.18                     | 0.19                           |
| 精氨酸 Arg            | %              | 1.18                   | 0.98                     | 1.02                           |
| 亮氨酸 Leu            | %              | 1.27                   | 1.01                     | 1.07                           |
| 异亮氨酸 Ile           | %              | 0.71                   | 0.59                     | 0.60                           |
| 苯丙氨酸 Phe           | %              | 0.64                   | 0.53                     | 0.54                           |
| 苯丙氨酸+酪氨酸 Phe + Tyr | %              | 1.18                   | 0.98                     | 1.00                           |
| 组氨酸 His            | %              | 0.31                   | 0.26                     | 0.27                           |

表 1 (续)

| 营养指标<br>Nutrient                                                                                                                                             | 单位<br>Unit | 0 周龄~8 周龄<br>0wks~8wks | 9 周龄~18 周龄<br>9wks~18wks | 19 周龄~开产<br>19wks~onset of lay |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------------------|--------------------------|--------------------------------|
| 脯氨酸 Pro                                                                                                                                                      | %          | 0.50                   | 0.34                     | 0.44                           |
| 缬氨酸 Val                                                                                                                                                      | %          | 0.73                   | 0.60                     | 0.62                           |
| 甘氨酸 + 丝氨酸 Gly + Ser                                                                                                                                          | %          | 0.82                   | 0.68                     | 0.71                           |
| 钙 Ca                                                                                                                                                         | %          | 0.90                   | 0.80                     | 2.00                           |
| 总磷 Total P                                                                                                                                                   | %          | 0.70                   | 0.60                     | 0.55                           |
| 非植酸磷 Nonphytate P                                                                                                                                            | %          | 0.40                   | 0.35                     | 0.32                           |
| 钠 Na                                                                                                                                                         | %          | 0.15                   | 0.15                     | 0.15                           |
| 氯 Cl                                                                                                                                                         | %          | 0.15                   | 0.15                     | 0.15                           |
| 铁 Fe                                                                                                                                                         | mg/kg      | 80                     | 60                       | 60                             |
| 铜 Cu                                                                                                                                                         | mg/kg      | 8                      | 6                        | 8                              |
| 锌 Zn                                                                                                                                                         | mg/kg      | 60                     | 40                       | 80                             |
| 锰 Mn                                                                                                                                                         | mg/kg      | 60                     | 40                       | 60                             |
| 碘 I                                                                                                                                                          | mg/kg      | 0.35                   | 0.35                     | 0.35                           |
| 硒 Se                                                                                                                                                         | mg/kg      | 0.30                   | 0.30                     | 0.30                           |
| 亚油酸 Linoleic Acid                                                                                                                                            | %          | 1                      | 1                        | 1                              |
| 维生素 A Vitamin A                                                                                                                                              | IU/kg      | 4 000                  | 4 000                    | 4 000                          |
| 维生素 D Vitamin D                                                                                                                                              | IU/kg      | 800                    | 800                      | 800                            |
| 维生素 E Vitamin E                                                                                                                                              | IU/kg      | 10                     | 8                        | 8                              |
| 维生素 K Vitamin K                                                                                                                                              | mg/kg      | 0.5                    | 0.5                      | 0.5                            |
| 硫胺素 Thiamin                                                                                                                                                  | mg/kg      | 1.8                    | 1.3                      | 1.3                            |
| 核黄素 Riboflavin                                                                                                                                               | mg/kg      | 3.6                    | 1.8                      | 2.2                            |
| 泛酸 Pantothenic Acid                                                                                                                                          | mg/kg      | 10                     | 10                       | 10                             |
| 烟酸 Niacin                                                                                                                                                    | mg/kg      | 30                     | 11                       | 11                             |
| 吡哆醇 Pyridoxine                                                                                                                                               | mg/kg      | 3                      | 3                        | 3                              |
| 生物素 Biotin                                                                                                                                                   | mg/kg      | 0.15                   | 0.10                     | 0.10                           |
| 叶酸 Folic Acid                                                                                                                                                | mg/kg      | 0.55                   | 0.25                     | 0.25                           |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub>                                                                                                                  | mg/kg      | 0.010                  | 0.003                    | 0.004                          |
| 胆碱 Choline                                                                                                                                                   | mg/kg      | 1 300                  | 900                      | 500                            |
| 注:根据中型体重鸡制订,轻型鸡可酌减 10%;开产日龄按 5% 产蛋率计算。<br>Based on middle-weight layers but reduced 10% for light-weight. The day of 5% egg production is the onset lay age. |            |                        |                          |                                |

表 2 产蛋鸡营养需要

Table 2 Nutrient Requirements of Laying Hens

| 营养指标<br>Nutrient     | 单位<br>Unit     | 开产~高峰期(>85%)<br>Onset of lay~over<br>85% rate of lay | 高峰后(<85%)<br>Rate of lay<85% | 种鸡<br>Breeder |
|----------------------|----------------|------------------------------------------------------|------------------------------|---------------|
| 代谢能 ME               | MJ/kg(Mcal/kg) | 11.29(2.70)                                          | 10.87(2.65)                  | 11.29(2.70)   |
| 粗蛋白质 CP              | %              | 16.5                                                 | 15.5                         | 18.0          |
| 蛋白能量比 CP/ME          | g/MJ(g/Mcal)   | 14.61(61.11)                                         | 14.26(58.49)                 | 15.94(66.67)  |
| 赖氨酸能量比 Lys/ME        | g/MJ(g/Mcal)   | 0.64(2.67)                                           | 0.61(2.54)                   | 0.63(2.63)    |
| 赖氨酸 Lys              | %              | 0.75                                                 | 0.70                         | 0.75          |
| 蛋氨酸 Met              | %              | 0.34                                                 | 0.32                         | 0.34          |
| 蛋氨酸+胱氨酸 Met + Cys    | %              | 0.65                                                 | 0.56                         | 0.65          |
| 苏氨酸 Thr              | %              | 0.55                                                 | 0.50                         | 0.55          |
| 色氨酸 Trp              | %              | 0.16                                                 | 0.15                         | 0.16          |
| 精氨酸 Arg              | %              | 0.76                                                 | 0.69                         | 0.76          |
| 亮氨酸 Leu              | %              | 1.02                                                 | 0.98                         | 1.02          |
| 异亮氨酸 Ile             | %              | 0.72                                                 | 0.66                         | 0.72          |
| 苯丙氨酸 Phe             | %              | 0.58                                                 | 0.52                         | 0.58          |
| 苯丙氨酸+酪氨酸 Phe + Tyr   | %              | 1.08                                                 | 1.06                         | 1.08          |
| 组氨酸 His              | %              | 0.25                                                 | 0.23                         | 0.25          |
| 缬氨酸 Val              | %              | 0.59                                                 | 0.54                         | 0.59          |
| 甘氨酸+丝氨酸 Gly + Ser    | %              | 0.57                                                 | 0.48                         | 0.57          |
| 可利用赖氨酸 Available Lys | %              | 0.66                                                 | 0.60                         | —             |
| 可利用蛋氨酸 Available Met | %              | 0.32                                                 | 0.30                         | —             |
| 钙 Ca                 | %              | 3.5                                                  | 3.5                          | 3.5           |
| 总磷 Total P           | %              | 0.60                                                 | 0.60                         | 0.60          |
| 非植酸磷 Nonphytate P    | %              | 0.32                                                 | 0.32                         | 0.32          |
| 钠 Na                 | %              | 0.15                                                 | 0.15                         | 0.15          |
| 氯 Cl                 | %              | 0.15                                                 | 0.15                         | 0.15          |
| 铁 Fe                 | mg/kg          | 60                                                   | 60                           | 60            |
| 铜 Cu                 | mg/kg          | 8                                                    | 8                            | 6             |
| 锰 Mn                 | mg/kg          | 60                                                   | 60                           | 60            |
| 锌 Zn                 | mg/kg          | 80                                                   | 80                           | 60            |
| 碘 I                  | mg/kg          | 0.35                                                 | 0.35                         | 0.35          |
| 硒 Se                 | mg/kg          | 0.30                                                 | 0.30                         | 0.30          |
| 亚油酸 Linoleic Acid    | %              | 1                                                    | 1                            | 1             |
| 维生素 A Vitamin A      | IU/kg          | 8 000                                                | 8 000                        | 10 000        |
| 维生素 D Vitamin D      | IU/kg          | 1 600                                                | 1 600                        | 2 000         |
| 维生素 E Vitamin E      | IU/kg          | 5                                                    | 5                            | 10            |
| 维生素 K Vitalmin K     | mg/kg          | 0.5                                                  | 0.5                          | 1.0           |

表 2 (续)

| 营养指标<br>Nutrient                            | 单位<br>Unit | 开产~高峰期(>85%)<br>Onset of lay~over<br>85% rate of lay | 高峰后(<85%)<br>Rate of lay<85% | 种鸡<br>Breeder |
|---------------------------------------------|------------|------------------------------------------------------|------------------------------|---------------|
| 硫胺素 Thiamin                                 | mg/kg      | 0.8                                                  | 0.8                          | 0.8           |
| 核黄素 Riboflavin                              | mg/kg      | 2.5                                                  | 2.5                          | 3.8           |
| 泛酸 Pantothenic Acid                         | mg/kg      | 2.2                                                  | 2.2                          | 10            |
| 烟酸 Niacin                                   | mg/kg      | 20                                                   | 20                           | 30            |
| 吡哆醇 Pyridoxine                              | mg/kg      | 3.0                                                  | 3.0                          | 4.5           |
| 生物素 Biotin                                  | mg/kg      | 0.10                                                 | 0.10                         | 0.15          |
| 叶酸 Folic Acid                               | mg/kg      | 0.25                                                 | 0.25                         | 0.35          |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub> | mg/kg      | 0.004                                                | 0.004                        | 0.004         |
| 胆碱 Choline                                  | mg/kg      | 500                                                  | 500                          | 500           |

表 3 生长蛋鸡体重与耗料量

Table 3 Body Weight and Feed Consumption of Immature Egg-type Chicken

| 周龄<br>wks | 周末体重,克/只<br>BW, g/bird | 耗料量,克/只<br>FI, g/bird | 累计耗料量,克/只<br>Accumulative FI, g/bird |
|-----------|------------------------|-----------------------|--------------------------------------|
| 1         | 70                     | 84                    | 84                                   |
| 2         | 130                    | 119                   | 203                                  |
| 3         | 200                    | 154                   | 357                                  |
| 4         | 275                    | 189                   | 546                                  |
| 5         | 360                    | 224                   | 770                                  |
| 6         | 445                    | 259                   | 1 029                                |
| 7         | 530                    | 294                   | 1 323                                |
| 8         | 615                    | 329                   | 1 652                                |
| 9         | 700                    | 357                   | 2 009                                |
| 10        | 785                    | 385                   | 2 394                                |
| 11        | 875                    | 413                   | 2 807                                |
| 12        | 965                    | 441                   | 3 248                                |
| 13        | 1 055                  | 469                   | 3 717                                |
| 14        | 1 145                  | 497                   | 4 214                                |
| 15        | 1 235                  | 525                   | 4 739                                |
| 16        | 1 325                  | 546                   | 5 285                                |
| 17        | 1 415                  | 567                   | 5 852                                |
| 18        | 1 505                  | 588                   | 6 440                                |
| 19        | 1 595                  | 609                   | 7 049                                |
| 20        | 1 670                  | 630                   | 7 679                                |

注:0~8周龄为自由采食,9周龄开始结合光照进行限饲。  
Fed at liberty during 0~8 weeks, controlled feeding begging at 9<sup>th</sup> week combing lighting regime.

## 4.2 肉用鸡营养需要

肉用仔鸡营养需要量见表4、表5,体重与耗料量见表6。

表4 肉用仔鸡营养需要之一  
Table 4 Nutrient Requirement of Broilers (1)

| 营养指标<br>Nutrient   | 单位<br>Unit     | 0 周龄~3 周龄<br>0wks~3wks | 4 周龄~6 周龄<br>4wks~6wks | 7 周龄~<br>7 wks~ |
|--------------------|----------------|------------------------|------------------------|-----------------|
| 代谢能 ME             | MJ/kg(Mcal/kg) | 12.54(3.00)            | 12.96(3.10)            | 13.17(3.15)     |
| 粗蛋白质 CP            | %              | 21.5                   | 20.0                   | 18.0            |
| 蛋白能量比 CP/ME        | g/MJ(g/Mcal)   | 17.14(71.67)           | 15.43(64.52)           | 13.67(57.14)    |
| 赖氨酸能量比 Lys/ME      | g/MJ(g/Mcal)   | 0.92(3.83)             | 0.77(3.23)             | 0.67(2.81)      |
| 赖氨酸 Lys            | %              | 1.15                   | 1.00                   | 0.87            |
| 蛋氨酸 Met            | %              | 0.50                   | 0.40                   | 0.34            |
| 蛋氨酸+胱氨酸 Met + Cys  | %              | 0.91                   | 0.76                   | 0.65            |
| 苏氨酸 Thr            | %              | 0.81                   | 0.72                   | 0.68            |
| 色氨酸 Trp            | %              | 0.21                   | 0.18                   | 0.17            |
| 精氨酸 Arg            | %              | 1.20                   | 1.12                   | 1.01            |
| 亮氨酸 Leu            | %              | 1.26                   | 1.05                   | 0.94            |
| 异亮氨酸 Ile           | %              | 0.81                   | 0.75                   | 0.63            |
| 苯丙氨酸 Phe           | %              | 0.71                   | 0.66                   | 0.58            |
| 苯丙氨酸+酪氨酸 Phe + Tyr | %              | 1.27                   | 1.15                   | 1.00            |
| 组氨酸 His            | %              | 0.35                   | 0.32                   | 0.27            |
| 脯氨酸 Pro            | %              | 0.58                   | 0.54                   | 0.47            |
| 缬氨酸 Val            | %              | 0.85                   | 0.74                   | 0.64            |
| 甘氨酸+丝氨酸 Gly + Ser  | %              | 1.24                   | 1.10                   | 0.96            |
| 钙 Ca               | %              | 1.0                    | 0.9                    | 0.8             |
| 总磷 Total P         | %              | 0.68                   | 0.65                   | 0.60            |
| 非植酸磷 Nonphytate P  | %              | 0.45                   | 0.40                   | 0.35            |
| 氯 Cl               | %              | 0.20                   | 0.15                   | 0.15            |
| 钠 Na               | %              | 0.20                   | 0.15                   | 0.15            |
| 铁 Fe               | mg/kg          | 100                    | 80                     | 80              |
| 铜 Cu               | mg/kg          | 8                      | 8                      | 8               |
| 锰 Mn               | mg/kg          | 120                    | 100                    | 80              |
| 锌 Zn               | mg/kg          | 100                    | 80                     | 80              |
| 碘 I                | mg/kg          | 0.70                   | 0.70                   | 0.70            |
| 硒 Se               | mg/kg          | 0.30                   | 0.30                   | 0.30            |
| 亚油酸 Linoleic acid  | %              | 1                      | 1                      | 1               |
| 维生素 A Vitamin A    | IU/kg          | 8 000                  | 6 000                  | 2 700           |
| 维生素 D Vitamin D    | IU/kg          | 1 000                  | 750                    | 400             |
| 维生素 E Vitamin E    | IU/kg          | 20                     | 10                     | 10              |



表 4 (续)

| 营养指标<br>Nutrient                            | 单位<br>Unit | 0 周龄~3 周龄<br>0wks~3wks | 4 周龄~6 周龄<br>4wks~6wks | 7 周龄~<br>7 wks~ |
|---------------------------------------------|------------|------------------------|------------------------|-----------------|
| 维生素 K Vitamin K                             | mg/kg      | 0.5                    | 0.5                    | 0.5             |
| 硫胺素 Thiamin                                 | mg/kg      | 2.0                    | 2.0                    | 2.0             |
| 核黄素 Riboflavin                              | mg/kg      | 8                      | 5                      | 5               |
| 泛酸 Pantothenic Acid                         | mg/kg      | 10                     | 10                     | 10              |
| 烟酸 Niacin                                   | mg/kg      | 35                     | 30                     | 30              |
| 吡哆醇 Pyridoxine                              | mg/kg      | 3.5                    | 3.0                    | 3.0             |
| 生物素 Biotin                                  | mg/kg      | 0.18                   | 0.15                   | 0.10            |
| 叶酸 Folic Acid                               | mg/kg      | 0.55                   | 0.55                   | 0.50            |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub> | mg/kg      | 0.010                  | 0.010                  | 0.007           |
| 胆碱 Choline                                  | mg/kg      | 1 300                  | 1 000                  | 750             |

表 5 肉用仔鸡营养需要之二

Table 5 Nutrient Requirement of Broilers (2)

| 营养指标<br>Nutrient     | 单位<br>Unit     | 0 周龄~2 周龄<br>0wks~2wks | 3 周龄~6 周龄<br>3wks~6wks | 7 周龄~<br>7wks~ |
|----------------------|----------------|------------------------|------------------------|----------------|
| 代谢能 ME               | MJ/kg(Mcal/kg) | 12.75(3.05)            | 12.96(3.10)            | 13.17(3.15)    |
| 粗蛋白质 CP              | %              | 22.0                   | 20.0                   | 17.0           |
| 蛋白能量比 CP/ME          | g/MJ(g/Mcal)   | 17.25(72.13)           | 15.43(64.52)           | 12.91(53.97)   |
| 赖氨酸能量比 Lys/ME        | g/MJ(g/Mcal)   | 0.88(3.67)             | 0.77(3.23)             | 0.62(2.60)     |
| 赖氨酸 Lys              | %              | 1.20                   | 1.00                   | 0.82           |
| 蛋氨酸 Met              | %              | 0.52                   | 0.40                   | 0.32           |
| 蛋氨酸 + 胱氨酸 Met + Cys  | %              | 0.92                   | 0.76                   | 0.63           |
| 苏氨酸 Thr              | %              | 0.84                   | 0.72                   | 0.64           |
| 色氨酸 Trp              | %              | 0.21                   | 0.18                   | 0.16           |
| 精氨酸 Arg              | %              | 1.25                   | 1.12                   | 0.95           |
| 亮氨酸 Leu              | %              | 1.32                   | 1.05                   | 0.89           |
| 异亮氨酸 Ile             | %              | 0.84                   | 0.75                   | 0.59           |
| 苯丙氨酸 Phe             | %              | 0.74                   | 0.66                   | 0.55           |
| 苯丙氨酸 + 酪氨酸 Phe + Tyr | %              | 1.32                   | 1.15                   | 0.98           |
| 组氨酸 His              | %              | 0.36                   | 0.32                   | 0.25           |
| 脯氨酸 Pro              | %              | 0.60                   | 0.54                   | 0.44           |
| 缬氨酸 Val              | %              | 0.90                   | 0.74                   | 0.72           |
| 甘氨酸 + 丝氨酸 Gly + Ser  | %              | 1.30                   | 1.10                   | 0.93           |
| 钙 Ca                 | %              | 1.05                   | 0.95                   | 0.80           |
| 总磷 Total P           | %              | 0.68                   | 0.65                   | 0.60           |
| 非植酸磷 Nonphytate P    | %              | 0.50                   | 0.40                   | 0.35           |

表 5 (续)

| 营养指标<br>Nutrient                            | 单位<br>Unit | 0 周龄~2 周龄<br>0wks~2wks | 3 周龄~6 周龄<br>3wks~6wks | 7 周龄~<br>7wks~ |
|---------------------------------------------|------------|------------------------|------------------------|----------------|
| 钠 Na                                        | %          | 0.20                   | 0.15                   | 0.15           |
| 氯 Cl                                        | %          | 0.20                   | 0.15                   | 0.15           |
| 铁 Fe                                        | mg/kg      | 120                    | 80                     | 80             |
| 铜 Cu                                        | mg/kg      | 10                     | 8                      | 8              |
| 锰 Mn                                        | mg/kg      | 120                    | 100                    | 80             |
| 锌 Zn                                        | mg/kg      | 120                    | 80                     | 80             |
| 碘 I                                         | mg/kg      | 0.70                   | 0.70                   | 0.70           |
| 硒 Se                                        | mg/kg      | 0.30                   | 0.30                   | 0.30           |
| 亚油酸 Linoleic acid                           | %          | 1                      | 1                      | 1              |
| 维生素 A Vitamin A                             | IU/kg      | 10 000                 | 6 000                  | 2 700          |
| 维生素 D Vitamin D                             | IU/kg      | 2 000                  | 1 000                  | 400            |
| 维生素 E Vitamin E                             | IU/kg      | 30                     | 10                     | 10             |
| 维生素 K Vitamin K                             | mg/kg      | 1.0                    | 0.5                    | 0.5            |
| 硫胺素 Thiamin                                 | mg/kg      | 2                      | 2                      | 2              |
| 核黄素 Riboflavin                              | mg/kg      | 10                     | 5                      | 5              |
| 泛酸 Pantothenic Acid                         | mg/kg      | 10                     | 10                     | 10             |
| 烟酸 Niacin                                   | mg/kg      | 45                     | 30                     | 30             |
| 吡哆醇 Pyridoxine                              | mg/kg      | 4.0                    | 3.0                    | 3.0            |
| 生物素 Biotin                                  | mg/kg      | 0.20                   | 0.15                   | 0.10           |
| 叶酸 Folic Acid                               | mg/kg      | 1.00                   | 0.55                   | 0.50           |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub> | mg/kg      | 0.010                  | 0.010                  | 0.007          |
| 胆碱 Choline                                  | mg/kg      | 1 500                  | 1 200                  | 750            |

表 6 肉用仔鸡体重与耗料量

Table 6 Body Weight and Feed Consumption of Broilers

| 周龄<br>wks | 体重,克/只<br>BW,g/bird | 耗料量,克/只<br>FI,g/bird | 累计耗料量,克/只<br>Accumulative FI,g/bird |
|-----------|---------------------|----------------------|-------------------------------------|
| 1         | 126                 | 113                  | 113                                 |
| 2         | 317                 | 273                  | 386                                 |
| 3         | 558                 | 473                  | 859                                 |
| 4         | 900                 | 643                  | 1 502                               |
| 5         | 1 309               | 867                  | 2 369                               |
| 6         | 1 696               | 954                  | 3 323                               |
| 7         | 2 117               | 1 164                | 4 487                               |
| 8         | 2 457               | 1 079                | 5 566                               |

肉用种鸡营养需要见表 7, 体重与耗料量见表 8。

表7 肉用种鸡营养需要

Table 7 Nutrient Requirements of Meat-type Chicken Breeders

| 营养指标<br>Nutrient   | 单位<br>Unit     | 0 周龄~6 周龄<br>0wks~6wks | 7 周龄~18 周龄<br>7wks~18wks | 19 周龄~<br>开产<br>19wks~Onset<br>of lay | 开产至高峰期<br>(产蛋>65%)<br>Onset of lay to<br>>65% Rate of lay | 高峰期后(产<br>蛋<65%)<br>Rate of lay<br><65% |
|--------------------|----------------|------------------------|--------------------------|---------------------------------------|-----------------------------------------------------------|-----------------------------------------|
| 代谢能 ME             | MJ/kg(Mcal/kg) | 12.12(2.90)            | 11.91(2.85)              | 11.70(2.80)                           | 11.70(2.80)                                               | 11.70(2.80)                             |
| 粗蛋白质 CP            | %              | 18.0                   | 15.0                     | 16.0                                  | 17.0                                                      | 16.0                                    |
| 蛋白能量比 CP/ME        | g/MJ(g/Mcal)   | 14.85(62.07)           | 12.59(52.63)             | 13.68(57.14)                          | 14.53(60.71)                                              | 13.68(57.14)                            |
| 赖氨酸能量比 Lys/ME      | g/MJ(g/Mcal)   | 0.76(3.17)             | 0.55(2.28)               | 0.64(2.68)                            | 0.68(2.86)                                                | 0.64(2.68)                              |
| 赖氨酸 Lys            | %              | 0.92                   | 0.65                     | 0.75                                  | 0.80                                                      | 0.75                                    |
| 蛋氨酸 Met            | %              | 0.34                   | 0.30                     | 0.32                                  | 0.34                                                      | 0.30                                    |
| 蛋氨酸+胱氨酸 Met + Cys  | %              | 0.72                   | 0.56                     | 0.62                                  | 0.64                                                      | 0.60                                    |
| 苏氨酸 Thr            | %              | 0.52                   | 0.48                     | 0.50                                  | 0.55                                                      | 0.50                                    |
| 色氨酸 Trp            | %              | 0.20                   | 0.17                     | 0.16                                  | 0.17                                                      | 0.16                                    |
| 精氨酸 Arg            | %              | 0.90                   | 0.75                     | 0.90                                  | 0.90                                                      | 0.88                                    |
| 亮氨酸 Leu            | %              | 1.05                   | 0.81                     | 0.86                                  | 0.86                                                      | 0.81                                    |
| 异亮氨酸 Ile           | %              | 0.66                   | 0.58                     | 0.58                                  | 0.58                                                      | 0.58                                    |
| 苯丙氨酸 Phe           | %              | 0.52                   | 0.39                     | 0.42                                  | 0.51                                                      | 0.48                                    |
| 苯丙氨酸+酪氨酸 Phe + Tyr | %              | 1.00                   | 0.77                     | 0.82                                  | 0.85                                                      | 0.80                                    |
| 组氨酸 His            | %              | 0.26                   | 0.21                     | 0.22                                  | 0.24                                                      | 0.21                                    |
| 脯氨酸 Pro            | %              | 0.50                   | 0.41                     | 0.44                                  | 0.45                                                      | 0.42                                    |
| 缬氨酸 Val            | %              | 0.62                   | 0.47                     | 0.50                                  | 0.66                                                      | 0.51                                    |
| 甘氨酸+丝氨酸 Gly + Ser  | %              | 0.70                   | 0.53                     | 0.56                                  | 0.57                                                      | 0.54                                    |
| 钙 Ca               | %              | 1.00                   | 0.90                     | 2.0                                   | 3.30                                                      | 3.50                                    |
| 总磷 Total P         | %              | 0.68                   | 0.65                     | 0.65                                  | 0.68                                                      | 0.65                                    |
| 非植酸磷 Nonphytate P  | %              | 0.45                   | 0.40                     | 0.42                                  | 0.45                                                      | 0.42                                    |
| 钠 Na               | %              | 0.18                   | 0.18                     | 0.18                                  | 0.18                                                      | 0.18                                    |
| 氯 Cl               | %              | 0.18                   | 0.18                     | 0.18                                  | 0.18                                                      | 0.18                                    |
| 铁 Fe               | mg/kg          | 60                     | 60                       | 80                                    | 80                                                        | 80                                      |
| 铜 Cu               | mg/kg          | 6                      | 6                        | 8                                     | 8                                                         | 8                                       |
| 锰 Mn               | mg/kg          | 80                     | 80                       | 100                                   | 100                                                       | 100                                     |
| 锌 Zn               | mg/kg          | 60                     | 60                       | 80                                    | 80                                                        | 80                                      |
| 碘 I                | mg/kg          | 0.70                   | 0.70                     | 1.00                                  | 1.00                                                      | 1.00                                    |
| 硒 Se               | mg/kg          | 0.30                   | 0.30                     | 0.30                                  | 0.30                                                      | 0.30                                    |
| 亚油酸 Linoleic Acid  | %              | 1                      | 1                        | 1                                     | 1                                                         | 1                                       |
| 维生素 A Vitamin A    | IU/kg          | 8 000                  | 6 000                    | 9 000                                 | 12 000                                                    | 12 000                                  |
| 维生素 D Vitamin D    | IU/kg          | 1 600                  | 1 200                    | 1 800                                 | 2 400                                                     | 2 400                                   |
| 维生素 E Vitamin E    | IU/kg          | 20                     | 10                       | 10                                    | 30                                                        | 30                                      |
| 维生素 K Vitamin K    | mg/kg          | 1.5                    | 1.5                      | 1.5                                   | 1.5                                                       | 1.5                                     |

表 7 (续)

| 营养指标<br>Nutrient                            | 单位<br>Unit | 0 周龄~6 周龄<br>0wks~6wks | 7 周龄~18 周龄<br>7wks~18wks | 19 周龄~<br>开产<br>19wks~Onset<br>of lay | 开产至高峰期<br>(产蛋>65%)<br>Onset of lay to<br>>65% Rate of lay | 高峰期后(产<br>蛋<65%)<br>Rate of lay<br><65% |
|---------------------------------------------|------------|------------------------|--------------------------|---------------------------------------|-----------------------------------------------------------|-----------------------------------------|
| 硫胺素 Thiamin                                 | mg/kg      | 1.8                    | 1.5                      | 1.5                                   | 2.0                                                       | 2.0                                     |
| 核黄素 Riboflavin                              | mg/kg      | 8                      | 6                        | 6                                     | 9                                                         | 9                                       |
| 泛酸 Pantothenic Acid                         | mg/kg      | 12                     | 10                       | 10                                    | 12                                                        | 12                                      |
| 烟酸 Niacin                                   | mg/kg      | 30                     | 20                       | 20                                    | 35                                                        | 35                                      |
| 吡哆醇 Pyridoxine                              | mg/kg      | 3.0                    | 3.0                      | 3.0                                   | 4.5                                                       | 4.5                                     |
| 生物素 Biotin                                  | mg/kg      | 0.15                   | 0.10                     | 0.10                                  | 0.20                                                      | 0.20                                    |
| 叶酸 Folic Acid                               | mg/kg      | 1.0                    | 0.5                      | 0.5                                   | 1.2                                                       | 1.2                                     |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub> | mg/kg      | 0.010                  | 0.006                    | 0.008                                 | 0.012                                                     | 0.012                                   |
| 胆碱 Choline                                  | mg/kg      | 1 300                  | 900                      | 500                                   | 500                                                       | 500                                     |

表 8 肉用种鸡体重与耗料量

Table 8 Body Weight and Feed Consumption of Meat-type Chicken Breeders

| 周龄<br>wks | 体重,克/只<br>BW, g/bird | 耗料量,克/只<br>FI, g/bird | 累计耗料量,克/只<br>Accumulative FI, g/bird |
|-----------|----------------------|-----------------------|--------------------------------------|
| 1         | 90                   | 100                   | 100                                  |
| 2         | 185                  | 168                   | 268                                  |
| 3         | 340                  | 231                   | 499                                  |
| 4         | 430                  | 266                   | 765                                  |
| 5         | 520                  | 287                   | 1 052                                |
| 6         | 610                  | 301                   | 1 353                                |
| 7         | 700                  | 322                   | 1 675                                |
| 8         | 795                  | 336                   | 2 011                                |
| 9         | 890                  | 357                   | 2 368                                |
| 10        | 985                  | 378                   | 2 746                                |
| 11        | 1 080                | 406                   | 3 152                                |
| 12        | 1 180                | 434                   | 3 586                                |
| 13        | 1 280                | 462                   | 4 048                                |
| 14        | 1 380                | 497                   | 4 545                                |
| 15        | 1 480                | 518                   | 5 063                                |
| 16        | 1 595                | 553                   | 5 616                                |
| 17        | 1 710                | 588                   | 6 204                                |
| 18        | 1 840                | 630                   | 6 834                                |
| 19        | 1 970                | 658                   | 7 492                                |
| 20        | 2 100                | 707                   | 8 199                                |
| 21        | 2 250                | 749                   | 8 948                                |

表 8 (续)

| 周龄<br>wks | 体重,克/只<br>BW,g/bird | 耗料量,克/只<br>FI,g/bird | 累计耗料量,克/只<br>Accumulative FI,g/bird |
|-----------|---------------------|----------------------|-------------------------------------|
| 22        | 2 400               | 798                  | 9 746                               |
| 23        | 2 550               | 847                  | 10 593                              |
| 24        | 2 710               | 896                  | 11 489                              |
| 25        | 2 870               | 952                  | 12 441                              |
| 29        | 3 477               | 1 190                | 13 631                              |
| 33        | 3 603               | 1 169                | 14 800                              |
| 43        | 3 608               | 1 141                | 15 941                              |
| 58        | 3 782               | 1 064                | 17 005                              |

## 4.3 黄羽肉鸡营养需要

黄羽肉鸡仔鸡营养需要见表 9, 体重及耗料量见表 10。

表 9 黄羽肉鸡仔鸡营养需要

Table 9 Nutrient Requirements of Chinese Color-feathered chicken

| 营养指标<br>Nutrient  | 单位<br>Unit     | ♀ 0 周龄~4 周龄<br>♂ 0 周龄~3 周龄<br>♀ 0wks~4wks<br>♂ 0wks~3wks | ♀ 5 周龄~8 周龄<br>♂ 4 周龄~5 周龄<br>♀ 5wks~8wks<br>♂ 4wks~5wks | ♀ >8 周龄 ♂ >5 周龄<br>♀ >8wks ♂ >5wks |
|-------------------|----------------|----------------------------------------------------------|----------------------------------------------------------|------------------------------------|
| 代谢能 ME            | MJ/kg(Mcal/kg) | 12.12(2.90)                                              | 12.54(3.00)                                              | 12.96(3.10)                        |
| 粗蛋白质 CP           | %              | 21.0                                                     | 19.0                                                     | 16.0                               |
| 蛋白能量比 CP/ME       | g/MJ(g/Mcal)   | 17.33(72.41)                                             | 15.15(63.3)                                              | 12.34(51.61)                       |
| 赖氨酸能量比 Lys/ME     | g/MJ(g/Mcal)   | 0.87(3.62)                                               | 0.78(3.27)                                               | 0.66(2.74)                         |
| 赖氨酸 Lys           | %              | 1.05                                                     | 0.98                                                     | 0.85                               |
| 蛋氨酸 Met           | %              | 0.46                                                     | 0.40                                                     | 0.34                               |
| 蛋氨酸+胱氨酸 Met+Cys   | %              | 0.85                                                     | 0.72                                                     | 0.65                               |
| 苏氨酸 Thr           | %              | 0.76                                                     | 0.74                                                     | 0.68                               |
| 色氨酸 Trp           | %              | 0.19                                                     | 0.18                                                     | 0.16                               |
| 精氨酸 Arg           | %              | 1.19                                                     | 1.10                                                     | 1.00                               |
| 亮氨酸 Leu           | %              | 1.15                                                     | 1.09                                                     | 0.93                               |
| 异亮氨酸 Ile          | %              | 0.76                                                     | 0.73                                                     | 0.62                               |
| 苯丙氨酸 Phe          | %              | 0.69                                                     | 0.65                                                     | 0.56                               |
| 苯丙氨酸+酪氨酸 Phe+Tyr  | %              | 1.28                                                     | 1.22                                                     | 1.00                               |
| 组氨酸 His           | %              | 0.33                                                     | 0.32                                                     | 0.27                               |
| 脯氨酸 Pro           | %              | 0.57                                                     | 0.55                                                     | 0.46                               |
| 缬氨酸 Val           | %              | 0.86                                                     | 0.82                                                     | 0.70                               |
| 甘氨酸+丝氨酸 Gly+Ser   | %              | 1.19                                                     | 1.14                                                     | 0.97                               |
| 钙 Ca              | %              | 1.00                                                     | 0.90                                                     | 0.80                               |
| 总磷 Total P        | %              | 0.68                                                     | 0.65                                                     | 0.60                               |
| 非植酸磷 Nonphytate P | %              | 0.45                                                     | 0.40                                                     | 0.35                               |
| 钠 Na              | %              | 0.15                                                     | 0.15                                                     | 0.15                               |

表 9 (续)

| 营养指标<br>Nutrient                            | 单位<br>Unit | ♀0 周龄~4 周龄<br>♂0 周龄~3 周龄<br>♀0wks~4wks<br>♂0wks~3wks | ♀5 周龄~8 周龄<br>♂4 周龄~5 周龄<br>♀5wks~8wks<br>♂4wks~5wks | ♀>8 周龄 ♂>5 周龄<br>♀>8wks ♂>5wks |
|---------------------------------------------|------------|------------------------------------------------------|------------------------------------------------------|--------------------------------|
| 氯 Cl                                        | %          | 0.15                                                 | 0.15                                                 | 0.15                           |
| 铁 Fe                                        | mg/kg      | 80                                                   | 80                                                   | 80                             |
| 铜 Cu                                        | mg/kg      | 8                                                    | 8                                                    | 8                              |
| 锰 Mn                                        | mg/kg      | 80                                                   | 80                                                   | 80                             |
| 锌 Zn                                        | mg/kg      | 60                                                   | 60                                                   | 60                             |
| 碘 I                                         | mg/kg      | 0.35                                                 | 0.35                                                 | 0.35                           |
| 硒 Se                                        | mg/kg      | 0.15                                                 | 0.15                                                 | 0.15                           |
| 亚油酸 Linoleic Acid                           | %          | 1                                                    | 1                                                    | 1                              |
| 维生素 A Vitamin A                             | IU/kg      | 5 000                                                | 5 000                                                | 5 000                          |
| 维生素 D Vitamin D                             | IU/kg      | 1 000                                                | 1 000                                                | 1 000                          |
| 维生素 E Vitamin E                             | IU/kg      | 10                                                   | 10                                                   | 10                             |
| 维生素 K Vitamin K                             | mg/kg      | 0.50                                                 | 0.50                                                 | 0.50                           |
| 硫胺素 Thiamin                                 | mg/kg      | 1.80                                                 | 1.80                                                 | 1.80                           |
| 核黄素 Riboflavin                              | mg/kg      | 3.60                                                 | 3.60                                                 | 3.00                           |
| 泛酸 Pantothenic Acid                         | mg/kg      | 10                                                   | 10                                                   | 10                             |
| 烟酸 Niacin                                   | mg/kg      | 35                                                   | 30                                                   | 25                             |
| 吡哆醇 Pyridoxine                              | mg/kg      | 3.5                                                  | 3.5                                                  | 3.0                            |
| 生物素 Biotin                                  | mg/kg      | 0.15                                                 | 0.15                                                 | 0.15                           |
| 叶酸 Folic Acid                               | mg/kg      | 0.55                                                 | 0.55                                                 | 0.55                           |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub> | mg/kg      | 0.010                                                | 0.010                                                | 0.010                          |
| 胆碱 Choline                                  | mg/kg      | 1 000                                                | 750                                                  | 500                            |

表 10 黄羽肉鸡仔鸡体重及耗料量

Table 10 Body Weight and Feed Consumption of Chinese Color-feathered chicken

| 周龄<br>wks | 周末体重, 克/只<br>BW, g/bird |              | 耗料量, 克/只<br>FI, g/bird |              | 累计耗料量, 克/只<br>Accumulative FI, g/bird |              |
|-----------|-------------------------|--------------|------------------------|--------------|---------------------------------------|--------------|
|           | 公鸡<br>Male              | 母鸡<br>Female | 公鸡<br>Male             | 母鸡<br>Female | 公鸡<br>Male                            | 母鸡<br>Female |
| 1         | 88                      | 89           | 76                     | 70           | 76                                    | 70           |
| 2         | 199                     | 175          | 201                    | 130          | 277                                   | 200          |
| 3         | 320                     | 253          | 269                    | 142          | 546                                   | 342          |
| 4         | 492                     | 378          | 371                    | 266          | 917                                   | 608          |
| 5         | 631                     | 493          | 516                    | 295          | 1 433                                 | 907          |
| 6         | 870                     | 622          | 632                    | 358          | 2 065                                 | 1 261        |
| 7         | 1 274                   | 751          | 751                    | 359          | 2 816                                 | 1 620        |
| 8         | 1 560                   | 949          | 719                    | 479          | 3 535                                 | 2 099        |

表 10 (续)

| 周龄<br>wks | 周末体重,克/只<br>BW, g/bird |              | 耗料量,克/只<br>FI, g/bird |              | 累计耗料量,克/只<br>Accumulative FI, g/bird |              |
|-----------|------------------------|--------------|-----------------------|--------------|--------------------------------------|--------------|
|           | 公鸡<br>Male             | 母鸡<br>Female | 公鸡<br>Male            | 母鸡<br>Female | 公鸡<br>Male                           | 母鸡<br>Female |
| 9         | 1 814                  | 1 137        | 836                   | 534          | 4 371                                | 2 633        |
| 10        |                        | 1 254        |                       | 540          |                                      | 3 028        |
| 11        |                        | 1 380        |                       | 549          |                                      | 3 577        |
| 12        |                        | 1 548        |                       | 514          |                                      | 4 091        |

黄羽肉鸡种鸡营养需要见表 11, 生长期体重与耗料量见表 12。

黄羽肉鸡种鸡产蛋期体重与耗料量见表 13。

表 11 黄羽肉鸡种鸡营养需要

Table 11 Nutrient Requirements of Chinese Color-feathered chicken Breeders

| 营养指标<br>Nutrient        | 单位<br>Unit     | 0 周龄~6 周龄<br>0wks~6wks | 7 周龄~18 周龄<br>7wks~18wks | 19 周龄~开产<br>19wks~Onset of lay | 产蛋期<br>Laying Period |
|-------------------------|----------------|------------------------|--------------------------|--------------------------------|----------------------|
| 代谢能 ME                  | MJ/kg(Mcal/kg) | 12.12(2.90)            | 11.70(2.70)              | 11.50(2.75)                    | 11.50(2.75)          |
| 粗蛋白 CP                  | %              | 20.0                   | 15.0                     | 16.0                           | 16.0                 |
| 蛋白能量比 CP/ME             | g/MJ(g/Mcal)   | 16.50(68.96)           | 12.82(55.56)             | 13.91(58.18)                   | 13.91(58.18)         |
| 赖氨酸能量比 Lys/ME           | g/MJ(g/Mcal)   | 0.74(3.10)             | 0.56(2.32)               | 0.70(2.91)                     | 0.70(2.91)           |
| 赖氨酸 Lys                 | %              | 0.90                   | 0.75                     | 0.80                           | 0.80                 |
| 蛋氨酸 Met                 | %              | 0.38                   | 0.29                     | 0.37                           | 0.40                 |
| 蛋氨酸 + 胱氨酸<br>Met + Cys  | %              | 0.69                   | 0.61                     | 0.69                           | 0.80                 |
| 苏氨酸 Thr                 | %              | 0.58                   | 0.52                     | 0.55                           | 0.56                 |
| 色氨酸 Try                 | %              | 0.18                   | 0.16                     | 0.17                           | 0.17                 |
| 精氨酸 Arg                 | %              | 0.99                   | 0.87                     | 0.90                           | 0.95                 |
| 亮氨酸 Leu                 | %              | 0.94                   | 0.74                     | 0.83                           | 0.86                 |
| 异亮氨酸 Ile                | %              | 0.60                   | 0.55                     | 0.56                           | 0.60                 |
| 苯丙氨酸 Phe                | %              | 0.51                   | 0.48                     | 0.50                           | 0.51                 |
| 苯丙氨酸 + 酪氨酸<br>Phe + Tyr | %              | 0.86                   | 0.81                     | 0.82                           | 0.84                 |
| 组氨酸 His                 | %              | 0.28                   | 0.24                     | 0.25                           | 0.26                 |
| 脯氨酸 Pro                 | %              | 0.43                   | 0.39                     | 0.40                           | 0.42                 |
| 缬氨酸 Val                 | %              | 0.60                   | 0.52                     | 0.57                           | 0.70                 |
| 甘氨酸 + 丝氨酸<br>Gly + Ser  | %              | 0.77                   | 0.69                     | 0.75                           | 0.78                 |
| 钙 Ca                    | %              | 0.90                   | 0.90                     | 2.00                           | 3.00                 |
| 总磷 Total P              | %              | 0.65                   | 0.61                     | 0.63                           | 0.65                 |
| 非植酸磷 Nonphytate P       | %              | 0.40                   | 0.36                     | 0.38                           | 0.41                 |

表 11 (续)

| 营养指标<br>Nutrient                            | 单位<br>Unit | 0 周龄~6 周龄<br>0wks~6wks | 7 周龄~18 周龄<br>7wks~18wks | 19 周龄~开产<br>19wks~Onset of lay | 产蛋期<br>Laying Period |
|---------------------------------------------|------------|------------------------|--------------------------|--------------------------------|----------------------|
| 钠 Na                                        | %          | 0.16                   | 0.16                     | 0.16                           | 0.16                 |
| 氯 Cl                                        | %          | 0.16                   | 0.16                     | 0.16                           | 0.16                 |
| 铁 Fe                                        | mg/kg      | 54                     | 54                       | 72                             | 72                   |
| 铜 Cu                                        | mg/kg      | 5.4                    | 5.4                      | 7.0                            | 7.0                  |
| 锰 Mn                                        | mg/kg      | 72                     | 72                       | 90                             | 90                   |
| 锌 Zn                                        | mg/kg      | 54                     | 54                       | 72                             | 72                   |
| 碘 I                                         | mg/kg      | 0.60                   | 0.60                     | 0.90                           | 0.90                 |
| 硒 Se                                        | mg/kg      | 0.27                   | 0.27                     | 0.27                           | 0.27                 |
| 亚油酸 Linoleic Acid                           | %          | 1                      | 1                        | 1                              | 1                    |
| 维生素 A Vitamin A                             | IU/kg      | 7 200                  | 5 400                    | 7 200                          | 10 800               |
| 维生素 D Vitamin D                             | IU/kg      | 1 440                  | 1 080                    | 1 620                          | 2 160                |
| 维生素 E Vitamin E                             | IU/kg      | 18                     | 9                        | 9                              | 27                   |
| 维生素 K Vitamin K                             | mg/kg      | 1.4                    | 1.4                      | 1.4                            | 1.4                  |
| 硫胺素 Thiamin                                 | mg/kg      | 1.6                    | 1.4                      | 1.4                            | 1.8                  |
| 核黄素 Riboflavin                              | mg/kg      | 7                      | 5                        | 5                              | 8                    |
| 泛酸 Pantothenic Acid                         | mg/kg      | 11                     | 9                        | 9                              | 11                   |
| 烟酸 Niacin                                   | mg/kg      | 27                     | 18                       | 18                             | 32                   |
| 吡哆醇 Pyridoxine                              | mg/kg      | 2.7                    | 2.7                      | 2.7                            | 4.1                  |
| 生物素 Biotin                                  | mg/kg      | 0.14                   | 0.09                     | 0.09                           | 0.18                 |
| 叶酸 Folic Acid                               | mg/kg      | 0.90                   | 0.45                     | 0.45                           | 1.08                 |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub> | mg/kg      | 0.009                  | 0.005                    | 0.007                          | 0.010                |
| 胆碱 Choline                                  | mg/kg      | 1 170                  | 810                      | 450                            | 450                  |

表 12 黄羽肉鸡种鸡生长期体重与耗料量

Table 12 Body Weight and Feed Consumption of Chinese Color-feathered chicken Breeders during Growing Period

| 周龄<br>wks | 体重,克/只<br>BW,g/bird | 耗料量,克/只<br>FI,g/bird | 累计耗料量,克/只<br>Accumulative FI,g/bird |
|-----------|---------------------|----------------------|-------------------------------------|
| 1         | 110                 | 90                   | 90                                  |
| 2         | 180                 | 196                  | 286                                 |
| 3         | 250                 | 252                  | 538                                 |
| 4         | 330                 | 266                  | 804                                 |
| 5         | 410                 | 280                  | 1 084                               |
| 6         | 500                 | 294                  | 1 378                               |
| 7         | 600                 | 322                  | 1 700                               |
| 8         | 690                 | 343                  | 2 043                               |
| 9         | 780                 | 364                  | 2 407                               |



表 12 (续)

| 周龄<br>wks | 体重,克/只<br>BW,g/bird | 耗料量,克/只<br>FI,g/bird | 累计耗料量,克/只<br>Accumulative FI,g/bird |
|-----------|---------------------|----------------------|-------------------------------------|
| 10        | 870                 | 385                  | 2 792                               |
| 11        | 950                 | 406                  | 3 198                               |
| 12        | 1 030               | 427                  | 3 625                               |
| 13        | 1 110               | 448                  | 4 073                               |
| 14        | 1 190               | 469                  | 4 542                               |
| 15        | 1 270               | 490                  | 5 032                               |
| 16        | 1 350               | 511                  | 5 543                               |
| 17        | 1 430               | 532                  | 6 075                               |
| 18        | 1 510               | 553                  | 6 628                               |
| 19        | 1 600               | 574                  | 7 202                               |
| 20        | 1 700               | 595                  | 7 797                               |

表 13 黄羽肉鸡种鸡产蛋期体重与耗料量

Table 13 Body Weight and Feed Consumption of Chinese Color-feathered chicken Breeders during Laying Period

| 周龄<br>wks | 体重,克/只<br>BW,g/bird | 耗料量,克/只<br>FI,g/bird | 累计耗料量,千克/只<br>Accumulative FI,kg/bird |
|-----------|---------------------|----------------------|---------------------------------------|
| 21        | 1 780               | 616                  | 616                                   |
| 22        | 1 860               | 644                  | 1 260                                 |
| 24        | 2 030               | 700                  | 1 960                                 |
| 26        | 2 200               | 840                  | 2 800                                 |
| 28        | 2 280               | 910                  | 3 710                                 |
| 30        | 2 310               | 910                  | 4 620                                 |
| 32        | 2 330               | 889                  | 5 509                                 |
| 34        | 2 360               | 889                  | 6 398                                 |
| 36        | 2 390               | 875                  | 7 273                                 |
| 38        | 2 410               | 875                  | 8 148                                 |
| 40        | 2 440               | 854                  | 9 002                                 |
| 42        | 2 460               | 854                  | 9 856                                 |
| 44        | 2 480               | 840                  | 10 696                                |
| 46        | 2 500               | 840                  | 11 536                                |
| 48        | 2 520               | 826                  | 12 362                                |
| 50        | 2 540               | 826                  | 13 188                                |
| 52        | 2 560               | 826                  | 14 014                                |
| 54        | 2 580               | 805                  | 14 819                                |
| 56        | 2 600               | 805                  | 15 624                                |
| 58        | 2 620               | 805                  | 16 429                                |
| 60        | 2 630               | 805                  | 17 234                                |
| 62        | 2 640               | 805                  | 18 039                                |
| 64        | 2 650               | 805                  | 18 844                                |
| 66        | 2 660               | 805                  | 19 649                                |

**5 鸡的常用饲料成分及营养价值表**

饲料描述及常规成分见表 14。

饲料中氨基酸含量见表 15。

饲料中矿物质及维生素含量见表 16。

鸡用饲料氨基酸表观利用率见表 17。

**6 常用矿物质饲料中矿物质元素的含量**

常用矿物质饲料中矿物质元素的含量见表 18。

**7 维生素化合物的维生素含量**

常用维生素类饲料添加剂产品有效成分含量见表 19。

**8 鸡常用必需矿物质元素耐受量**

鸡常用必需矿物质元素耐受量见表 20。

中国禽用饲料成分及营养价值表  
Tables of Feed Composition and Nutritive Values for Poultry in China

表 14 饲料描述及常规成分

Table 14 Feed Description and Proximate Composition

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name           | 饲料描述<br>Description                                                 | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|-----------------------------|---------------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                             |                                                                     |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 1           | 4-07-0278      | 玉米<br>corn grain            | 成熟, 高蛋白优质<br>mature, high-protein, high-class                       | 86.0         | 9.4          | 3.1          | 1.2          | 71.1                | 1.2           | —                  | —                  | 0.02       | 0.27       | 0.12                  | 3.18    | 13.31 |
| 2           | 4-07-0288      | 玉米<br>corn grain            | 成熟, 高赖氨酸, 优质<br>mature, high lysine, high-class                     | 86.0         | 8.5          | 5.3          | 2.6          | 67.3                | 1.3           | —                  | —                  | 0.16       | 0.25       | 0.09                  | 3.25    | 13.60 |
| 3           | 4-07-0279      | 玉米<br>corn grain            | 成熟, GB/T 17890—1999, 1级<br>mature, GB/T 17890 - 1999, 1st-grade     | 86.0         | 8.7          | 3.6          | 1.6          | 70.7                | 1.4           | 9.3                | 2.7                | 0.02       | 0.27       | 0.12                  | 3.24    | 13.56 |
| 4           | 4-07-0280      | 玉米<br>corn grain            | 成熟, GB/T 17890—1999, 2级<br>mature, GB/T 17890—1999, 2nd-grade       | 86.0         | 7.8          | 3.5          | 1.6          | 71.8                | 1.3           | —                  | —                  | 0.02       | 0.27       | 0.12                  | 3.22    | 13.47 |
| 5           | 4-07-0272      | 高粱<br>sorghum grain         | 成熟, NY/T 1级<br>mature, NY/T 1st-grade                               | 86.0         | 9.0          | 3.4          | 1.4          | 70.4                | 1.8           | 17.4               | 8.0                | 0.13       | 0.36       | 0.17                  | 2.94    | 12.30 |
| 6           | 4-07-0270      | 小麦<br>wheat grain           | 混合小麦, 成熟 NY/T 2级<br>mixed wheat, mature NY/T 2nd-grade              | 87.0         | 13.9         | 1.7          | 1.9          | 67.6                | 1.9           | 13.3               | 3.9                | 0.17       | 0.41       | 0.13                  | 3.04    | 12.72 |
| 7           | 4-07-0274      | 大麦(裸)<br>naked barley grain | 裸大麦, 成熟 NY/T 2级<br>naked barley, mature NY/T 2nd-grade              | 87.0         | 13.0         | 2.1          | 2.0          | 67.7                | 2.2           | 10.0               | 2.2                | 0.04       | 0.39       | 0.21                  | 2.68    | 11.21 |
| 8           | 4-07-0277      | 大麦(皮)<br>barley grain       | 皮大麦, 成熟 NY/T 1级<br>barley grain, mature, GB/T 17890-1999, 1st-grade | 87.0         | 11.0         | 1.7          | 4.8          | 67.1                | 2.4           | 18.4               | 6.8                | 0.09       | 0.33       | 0.17                  | 2.70    | 11.30 |
| 9           | 4-07-0281      | 黑麦<br>rye                   | 籽粒, 进口<br>grain(kernel), imported                                   | 88.0         | 11.0         | 1.5          | 2.2          | 71.5                | 1.8           | 12.3               | 4.6                | 0.05       | 0.30       | 0.11                  | 2.69    | 11.25 |
| 10          | 4-07-0273      | 稻谷<br>paddy                 | 成熟晒干 NY/T 2级<br>mature, sun-cured, NY/T, 1st-grade                  | 86.0         | 7.8          | 1.6          | 8.2          | 63.8                | 4.6           | 27.4               | 28.7               | 0.03       | 0.36       | 0.20                  | 2.63    | 11.00 |

表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name                  | 饲料描述<br>Description                                                         | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|------------------------------------|-----------------------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                                    |                                                                             |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 11          | 4-07-0276      | 糙米<br>rough rice                   | 良,成熟,未去米糠<br>good-class, mature with rice bran                              | 87.0         | 8.8          | 2.0          | 0.7          | 74.2                | 1.3           | —                  | —                  | 0.03       | 0.35       | 0.15                  | 3.36    | 14.06 |
| 12          | 4-07-0275      | 碎米<br>broken rice                  | 良,加工精米后的副产品<br>good-class, byproduct for re-<br>fined rice                  | 88.0         | 10.4         | 2.2          | 1.1          | 72.7                | 1.6           | —                  | —                  | 0.06       | 0.35       | 0.15                  | 3.40    | 14.23 |
| 13          | 4-07-0479      | 粟(谷子)<br>millet grain              | 合格,带壳,成熟<br>qualified, mature with hull                                     | 86.5         | 9.7          | 2.3          | 6.8          | 65.0                | 2.7           | 15.2               | 13.3               | 0.12       | 0.30       | 0.11                  | 2.84    | 11.88 |
| 14          | 4-04-0067      | 木薯干<br>cassava tuber flake         | 木薯干片,晒干 NY/T 合格<br>cassava tuber flake, sun-cured,<br>NY/T, qualified       | 87.0         | 2.5          | 0.7          | 2.5          | 79.4                | 1.9           | 8.4                | 6.4                | 0.27       | 0.09       | —                     | 2.96    | 12.38 |
| 15          | 4-04-0068      | 甘薯干<br>sweet potato tuber<br>flake | 甘薯干片,晒干 NY/T 合格<br>sweet potato tuber flake, sun-<br>cured, NY/T, qualified | 87.0         | 4.0          | 0.8          | 2.8          | 76.4                | 3.0           | —                  | —                  | 0.19       | 0.02       | —                     | 2.34    | 9.79  |
| 16          | 4-08-0104      | 次粉<br>wheat middling and<br>reddog | 黑面,黄粉,下面 NY/T 1 级<br>rough, yellow meal, NY/T 1st-<br>grade                 | 88.0         | 15.4         | 2.2          | 1.5          | 67.1                | 1.5           | 18.7               | 4.3                | 0.08       | 0.48       | 0.14                  | 3.05    | 12.76 |
| 17          | 4-08-0105      | 次粉<br>wheat middling and<br>reddog | 黑面,黄粉,下面 NY/T 2 级<br>rough, yellow meal, NY/T<br>2nd-grade                  | 87.0         | 13.6         | 2.1          | 2.8          | 66.7                | 1.8           | —                  | —                  | 0.08       | 0.48       | 0.14                  | 2.99    | 12.51 |
| 18          | 4-08-0069      | 小麦麸<br>wheat bran                  | 传统制粉工艺 NY/T 1 级<br>traditional processing, NY/T<br>1st-grade                | 87.0         | 15.7         | 3.9          | 8.9          | 53.6                | 4.9           | 42.1               | 13.0               | 0.11       | 0.92       | 0.24                  | 1.63    | 6.82  |
| 19          | 4-08-0070      | 小麦麸<br>wheat bran                  | 传统制粉工艺 NY/T 2 级<br>traditional processing, NY/T<br>2nd-grade                | 87.0         | 14.3         | 4.0          | 6.8          | 57.1                | 4.8           | —                  | —                  | 0.10       | 0.93       | 0.24                  | 1.62    | 6.78  |
| 20          | 4-08-0041      | 米糠<br>rice bran                    | 新鲜,不脱脂 NY/T 2 级<br>fresh, nondefat NY/T 2nd-grade                           | 87.0         | 12.8         | 16.5         | 5.7          | 44.5                | 7.5           | 22.9               | 13.4               | 0.07       | 1.43       | 0.10                  | 2.68    | 11.21 |
| 21          | 4-10-0025      | 米糠饼<br>rice bran meal<br>(exp.)    | 未脱脂,机榨 NY/T 1 级<br>nondefat, mech - extd, NY/T<br>1st-grade                 | 88.0         | 14.7         | 9.0          | 7.4          | 48.2                | 8.7           | 27.7               | 11.6               | 0.14       | 1.69       | 0.22                  | 2.43    | 10.17 |

表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name                | 饲料描述<br>Description                                                       | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|----------------------------------|---------------------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                                  |                                                                           |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 22          | 4-10-0018      | 米糠粕<br>rice bran meal<br>(sol.)  | 浸提或预压浸提, NY/T 1 级<br>solv-extd/pre-press solv-extd,<br>NY/T 1st-grade     | 87.0         | 15.1         | 2.0          | 7.5          | 53.6                | 8.8           | —                  | —                  | 0.15       | 1.82       | 0.24                  | 1.98    | 8.28  |
| 23          | 5-09-0127      | 大豆<br>soybean                    | 黄大豆, 成熟 NY/T 2 级<br>yellow, mature, NY/T 2nd-grade                        | 87.0         | 35.5         | 17.3         | 4.3          | 25.7                | 4.2           | 7.9                | 7.3                | 0.27       | 0.48       | 0.30                  | 3.24    | 13.56 |
| 24          | 5-09-0128      | 全脂大豆<br>full-fat soybean         | 湿法膨化, 生大豆为 NY/T 2 级<br>moister swelling, raw bean<br>NY/T 2nd-grade       | 88.0         | 35.5         | 18.7         | 4.6          | 25.2                | 4.0           | —                  | —                  | 0.32       | 0.40       | 0.25                  | 3.75    | 15.69 |
| 25          | 5-10-0241      | 大豆饼<br>soybean meal<br>(exp.)    | 机榨 NY/T 2 级<br>mech-extd NY/T 2nd-grade                                   | 89.0         | 41.8         | 5.8          | 4.8          | 30.7                | 5.9           | 18.1               | 15.5               | 0.31       | 0.50       | 0.25                  | 2.52    | 10.54 |
| 26          | 5-10-0103      | 大豆粕<br>soybean meal<br>(sol.)    | 去皮, 浸提或预压浸提 NY/T 1 级<br>dehull, solv - extd/pre - press<br>solv-extd NY/T | 89.0         | 47.9         | 1.0          | 4.0          | 31.2                | 4.9           | 8.8                | 5.3                | 0.34       | 0.65       | 0.19                  | 2.40    | 10.04 |
| 27          | 5-10-0102      | 大豆粕<br>soybean meal<br>(sol.)    | 浸提或预压浸提 NY/T 2 级<br>solv-extd/pre-press solv-extd<br>NY/T 2nd-grade       | 89.0         | 44.0         | 1.9          | 5.2          | 31.8                | 6.1           | 13.6               | 9.6                | 0.33       | 0.62       | 0.18                  | 2.35    | 9.83  |
| 28          | 5-10-0118      | 棉籽饼<br>cottonseed meal<br>(exp.) | 机榨 NY/T 2 级<br>mech-extd NY/T 2nd-grade                                   | 88.0         | 36.3         | 7.4          | 12.5         | 26.1                | 5.7           | 32.1               | 22.9               | 0.21       | 0.83       | 0.28                  | 2.16    | 9.04  |
| 29          | 5-10-0119      | 棉籽粕<br>cottonseed meal<br>(sol.) | 浸提或预压浸提 NY/T 1 级<br>solv-extd/pre-press solv-extd<br>NY/T 1st-grade       | 90.0         | 47.0         | 0.5          | 10.2         | 26.3                | 6.0           | —                  | —                  | 0.25       | 1.10       | 0.38                  | 1.86    | 7.78  |
| 30          | 5-10-0117      | 棉籽粕<br>cottonseed meal<br>(sol.) | 浸提或预压浸提 NY/T 2 级<br>solv-extd/pre-press solv-extd<br>NY/T 2nd-grade       | 90.0         | 43.5         | 0.5          | 10.5         | 28.9                | 6.6           | 28.4               | 19.4               | 0.28       | 1.04       | 0.36                  | 2.03    | 8.49  |
| 31          | 5-10-0183      | 菜籽饼<br>rapeseed meal<br>(exp.)   | 机榨 NY/T 2 级<br>mech-extd NY/T 2nd-grade                                   | 88.0         | 35.7         | 7.4          | 11.4         | 26.3                | 7.2           | 33.3               | 26.0               | 0.59       | 0.96       | 0.33                  | 1.95    | 8.16  |

表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name                 | 饲料描述<br>Description                                                           | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|-----------------------------------|-------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                                   |                                                                               |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 32          | 5-10-0121      | 菜籽粕<br>(sol.)                     | 浸提或预压浸提 NY/T 2 级<br>solv-extd/pre-press solv-extd<br>NY/T 2nd-grade           | 88.0         | 38.6         | 1.4          | 11.8         | 28.9                | 7.3           | 20.7               | 16.8               | 0.65       | 1.02       | 0.35                  | 1.77    | 7.41  |
| 33          | 5-10-0116      | 花生仁饼<br>peanut meal (exp.)        | 机榨 NY/T 2 级<br>mech-extd NY/T 2nd-grade                                       | 88.0         | 44.7         | 7.2          | 5.9          | 25.1                | 5.1           | 14.0               | 8.7                | 0.25       | 0.53       | 0.31                  | 2.78    | 11.63 |
| 34          | 5-10-0115      | 花生仁粕<br>peanut meal (sol.)        | 浸提或预压浸提 NY/T 2 级<br>solv-extd/pre-press solv-extd<br>NY/T 2nd-grade           | 88.0         | 47.8         | 1.4          | 6.2          | 27.2                | 5.4           | 15.5               | 11.7               | 0.27       | 0.56       | 0.33                  | 2.60    | 10.88 |
| 35          | 5-10-0031      | 向日葵仁饼<br>sunflower meal<br>(exp.) | 壳仁比为 35:65 NY/T 3 级<br>hull/kernel 35:65, NY/T 3rd-<br>grade                  | 88.0         | 29.0         | 2.9          | 20.4         | 31.0                | 4.7           | 41.4               | 29.6               | 0.24       | 0.87       | 0.13                  | 1.59    | 6.65  |
| 36          | 5-10-0242      | 向日葵仁粕<br>sunflower meal<br>(sol.) | 壳仁比为 16:84 NY/T 2 级<br>hull/kernel 16:84 NY/T 3rd<br>grade                    | 88.0         | 36.5         | 1.0          | 10.5         | 34.4                | 5.6           | 14.9               | 13.6               | 0.27       | 1.13       | 0.17                  | 2.32    | 9.71  |
| 37          | 5-10-0243      | 向日葵仁粕<br>sunflower meal<br>(sol.) | 壳仁比为 24:76 NY/T 2 级<br>hull/kernel 24:76 NY/T 2nd-<br>grade                   | 88.0         | 33.6         | 1.0          | 14.8         | 38.8                | 5.3           | 32.8               | 23.5               | 0.26       | 1.03       | 0.16                  | 2.03    | 8.49  |
| 38          | 5-10-0119      | 亚麻仁饼<br>linseed meal<br>(exp.)    | 机榨 NY/T 2 级<br>mech-extd NY/T 2nd-grade                                       | 88.0         | 32.2         | 7.8          | 7.8          | 34.0                | 6.2           | 29.7               | 27.1               | 0.39       | 0.88       | 0.38                  | 2.34    | 9.79  |
| 39          | 5-10-0120      | 亚麻仁粕<br>linseed meal<br>(sol.)    | 浸提或预压浸提 NY/T 2 级<br>solv-extd/pre-press solv-extd<br>NY/T 2nd-grade           | 88.0         | 34.8         | 1.8          | 8.2          | 36.6                | 6.6           | 21.6               | 14.4               | 0.42       | 0.95       | 0.42                  | 1.90    | 7.95  |
| 40          | 5-10-0246      | 芝麻饼<br>sesame meal<br>(exp.)      | 机榨, CP40 %<br>mech-extd, CP 40 %                                              | 92.0         | 39.2         | 10.3         | 7.2          | 24.9                | 10.4          | 18.0               | 13.2               | 2.24       | 1.19       | 0.00                  | 2.14    | 8.95  |
| 41          | 5-11-0001      | 玉米蛋白粉<br>corn gluten meal         | 玉米去胚芽, 淀粉后的面筋<br>部分 CP60 %<br>corn gluten without plumule &<br>starch, CP60 % | 90.1         | 63.5         | 5.4          | 1.0          | 19.2                | 1.0           | 8.7                | 4.6                | 0.07       | 0.44       | 0.17                  | 3.88    | 16.23 |

表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name                       | 饲料描述<br>Description                                                   | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|-----------------------------------------|-----------------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                                         |                                                                       |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 42          | 5-11-0002      | 玉米蛋白粉<br>corn gluten meal               | 同上, 中等蛋白产品, CP50 %<br>corn gluten without plumule<br>& starch, CP50 % | 91.2         | 51.3         | 7.8          | 2.1          | 28.0                | 2.0           | —                  | —                  | 0.06       | 0.42       | 0.16                  | 3.41    | 14.27 |
| 43          | 5-11-0008      | 玉米蛋白粉<br>corn gluten meal               | 同上, 中等蛋白产品, CP40 %<br>corn gluten without plumule<br>& starch, CP40 % | 89.9         | 44.3         | 6.0          | 1.6          | 37.1                | 0.9           | —                  | —                  | —          | —          | —                     | 3.18    | 13.31 |
| 44          | 5-11-0003      | 玉米蛋白饲料<br>corn gluten feed              | 玉米去胚芽去淀粉后的含皮<br>残渣<br>corn residue without plumule<br>& starch        | 88.0         | 19.3         | 7.5          | 7.8          | 48.0                | 5.4           | 33.6               | 10.5               | 0.15       | 0.70       | —                     | 2.02    | 8.45  |
| 45          | 4-10-0026      | 玉米胚芽饼<br>corn germ meal<br>(exp.)       | 玉米湿磨后的胚芽, 机榨<br>corn plumule, wet grinder,<br>mech-extd               | 90.0         | 16.7         | 9.6          | 6.3          | 50.8                | 6.6           | —                  | —                  | 0.04       | 1.45       | —                     | 2.24    | 9.37  |
| 46          | 4-10-0244      | 玉米胚芽粕<br>corn germ meal<br>(sol.)       | 玉米湿磨后的胚芽, 浸提<br>corn plumule, wet grinder,<br>solv-extd               | 90.0         | 20.8         | 2.0          | 6.5          | 54.8                | 5.9           | —                  | —                  | 0.06       | 1.23       | —                     | 2.07    | 8.66  |
| 47          | 5-11-0007      | DDGS<br>corn distiller's grains<br>with | 玉米啤酒糟及可溶物, 脱水<br>corn distiller's grains with solu-<br>ble, dehy      | 90.0         | 28.3         | 13.7         | 7.1          | 36.8                | 4.1           | —                  | —                  | 0.20       | 0.74       | 0.42                  | 2.20    | 9.20  |
| 48          | 5-11-0009      | 蚕豆豆浆蛋白粉<br>broad bean gluten<br>meal    | 蚕豆去皮制粉丝后的浆液,<br>脱水<br>broad bean distiller's with sol-<br>ubles, dehy | 88.0         | 66.3         | 4.7          | 4.1          | 10.3                | 2.6           | —                  | —                  | —          | 0.59       | —                     | 3.47    | 14.52 |
| 49          | 5-11-0004      | 麦芽根<br>barley malt sprouts              | 大麦芽副产品, 干燥<br>barley malt byproduct, dried                            | 89.7         | 28.3         | 1.4          | 12.5         | 41.4                | 6.1           | —                  | —                  | 0.22       | 0.73       | —                     | 1.41    | 5.90  |
| 50          | 5-13-0044      | 鱼粉 (CP64.5 %)<br>fish meal              | 7 样平均值<br>average for 7 samples                                       | 90.0         | 64.5         | 5.6          | 0.5          | 8.0                 | 11.4          | —                  | —                  | 3.81       | 2.83       | 2.83                  | 2.96    | 12.38 |
| 51          | 5-13-0045      | 鱼粉 (CP62.5 %)<br>fish meal              | 8 样平均值<br>average for 8 samples                                       | 90.0         | 62.5         | 4.0          | 0.5          | 10.0                | 12.3          | —                  | —                  | 3.96       | 3.05       | 3.05                  | 2.91    | 12.18 |

表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name                   | 饲料描述<br>Description                                                               | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>Nl-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|-------------------------------------|-----------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|------------------------|---------|-------|
|             |                |                                     |                                                                                   |              |              |              |              |                     |               |                    |                    |            |            |                        | Mcal/kg | MJ/kg |
| 52          | 5-13-0046      | 鱼粉(CP60.2%)<br>fish meal            | 沿海产的海鱼粉,脱脂,12样<br>平均值<br>sea fish meal by coast, defat,<br>average for 12 samples | 90.0         | 60.2         | 4.9          | 0.5          | 11.6                | 12.8          | —                  | —                  | 4.04       | 2.90       | 2.90                   | 2.82    | 11.80 |
| 53          | 5-13-0077      | 鱼粉(CP53.5%)<br>fish meal            | 沿海产的海鱼粉,脱脂,11样<br>平均值<br>sea fish meal by coast, defat,<br>average for 11 samples | 90.0         | 53.5         | 10.0         | 0.8          | 4.9                 | 20.8          | —                  | —                  | 5.88       | 3.20       | 3.20                   | 2.90    | 12.13 |
| 54          | 5-13-0036      | 血粉<br>blood meal                    | 鲜猪血 喷雾干燥<br>fresh pig blood, dried                                                | 88.0         | 82.8         | 0.4          | 0.0          | 1.6                 | 3.2           | —                  | —                  | 0.29       | 0.31       | 0.31                   | 2.46    | 10.29 |
| 55          | 5-13-0037      | 羽毛粉<br>feather meal                 | 纯净羽毛,水解<br>pure feather, hydrolysis                                               | 88.0         | 77.9         | 2.2          | 0.7          | 1.4                 | 5.8           | —                  | —                  | 0.20       | 0.68       | 0.68                   | 2.73    | 11.42 |
| 56          | 5-13-0038      | 皮革粉<br>leather meal                 | 废牛皮,水解<br>wasted cattlehide, hydrolysis                                           | 88.0         | 74.7         | 0.8          | 1.6          | —                   | 10.9          | —                  | —                  | 4.40       | 0.15       | 0.15                   | —       | —     |
| 57          | 5-13-0047      | 肉骨粉<br>meat and bone meal           | 屠宰下脚,带骨干燥粉碎<br>slaughter waste with bone,<br>dried, ground                        | 93.0         | 50.0         | 8.5          | 2.8          | —                   | 31.7          | 32.5               | 5.6                | 9.20       | 4.70       | 4.70                   | 2.38    | 9.96  |
| 58          | 5-13-0048      | 肉粉<br>meat meal                     | 脱脂<br>defatted                                                                    | 94.0         | 54.0         | 12.0         | 1.4          | —                   | —             | 31.6               | 8.3                | 7.69       | 3.88       | —                      | 2.20    | 9.20  |
| 59          | 1-05-0074      | 苜蓿草粉<br>(CP19%)<br>alfalfa meal     | 一茬盛花期烘干 NY/T 1级<br>1st-flower period, stoving, NY/T<br>1st-grade                  | 87.0         | 19.1         | 2.3          | 22.7         | 35.3                | 7.6           | 36.7               | 25.0               | 1.40       | 0.51       | 0.51                   | 0.97    | 4.06  |
| 60          | 1-05-0075      | 苜蓿草粉<br>(CP17%)<br>alfalfa meal     | 一茬盛花期烘干 NY/T 2级<br>1st-flower period, stoving, NY/T<br>2nd-grade                  | 87.0         | 17.2         | 2.6          | 25.6         | 33.3                | 8.3           | 39.0               | 28.6               | 1.52       | 0.22       | 0.22                   | 0.87    | 3.64  |
| 61          | 1-05-0076      | 苜蓿草粉<br>(CP14%~15%)<br>alfalfa meal | NY/T 3级 NY/T<br>3rd-grade                                                         | 87.0         | 14.3         | 2.1          | 29.8         | 33.8                | 10.1          | 36.8               | 2.9                | 1.34       | 0.19       | 0.19                   | 0.84    | 3.51  |
| 62          | 5-11-0005      | 啤酒糟<br>brewers dried grain          | 大麦酿造副产品<br>byproducts for barley brewer                                           | 88.0         | 24.3         | 5.3          | 13.4         | 40.8                | 4.2           | 39.4               | 24.6               | 0.32       | 0.42       | 0.14                   | 2.37    | 9.92  |



表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name           | 饲料描述<br>Description                                          | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|-----------------------------|--------------------------------------------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                             |                                                              |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 63          | 7-15-0001      | 啤酒酵母<br>brewers dried yeast | 啤酒酵母菌粉, QB/T 1940—94<br>brewer's yeast meal, QB/<br>T1940—94 | 91.7         | 52.4         | 0.4          | 0.6          | 33.6                | 4.7           | —                  | —                  | 0.16       | 1.02       | —                     | 2.52    | 10.54 |
| 64          | 4-13-0075      | 乳清粉<br>whey, dehydrated     | 乳清, 脱水, 低乳糖含量<br>whey, dehydrated, low lactose               | 94.0         | 12.0         | 0.7          | 0.0          | 71.6                | 9.7           | —                  | —                  | 0.87       | 0.79       | 0.79                  | 2.73    | 11.42 |
| 65          | 5-01-0162      | 酪蛋白<br>casein               | 脱水<br>dehydrosis                                             | 91.0         | 88.7         | 0.8          | —            | —                   | —             | —                  | —                  | 0.63       | 1.01       | 0.82                  | 4.13    | 17.28 |
| 66          | 5-14-0503      | 明胶<br>gelatin               |                                                              | 90.0         | 88.6         | 0.5          | —            | —                   | —             | —                  | —                  | 0.49       | —          | —                     | 2.36    | 9.87  |
| 67          | 4-06-0076      | 牛奶乳糖<br>milk lactose        | 进口, 含乳糖 80% 以上<br>imported, lactose ≥ 80%                    | 96.0         | 4.0          | 0.5          | 0.0          | 83.5                | 8.0           | —                  | —                  | 0.52       | 0.62       | 0.62                  | 2.69    | 11.25 |
| 68          | 4-06-0077      | 乳糖<br>milk lactose          |                                                              | 96.0         | 0.3          | —            | —            | 95.7                | —             | —                  | —                  | —          | —          | —                     | —       | —     |
| 69          | 4-06-0078      | 葡萄糖<br>glucose              |                                                              | 90.0         | 0.3          | —            | —            | 89.7                | —             | —                  | —                  | —          | —          | —                     | 3.08    | 12.89 |
| 70          | 4-06-0079      | 蔗糖<br>sucrose               |                                                              | 99.0         | 0.0          | 0.0          | —            | —                   | —             | —                  | —                  | 0.04       | 0.01       | 0.01                  | 3.90    | 16.32 |
| 71          | 4-02-0889      | 玉米淀粉<br>corn starch         |                                                              | 99.0         | 0.3          | 0.2          | —            | —                   | —             | —                  | —                  | 0.00       | 0.03       | 0.01                  | 3.16    | 13.22 |
| 72          | 4-07-0001      | 牛脂<br>bef tallow            |                                                              | 99.0         | 0.3          | ≥ 98         | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 7.78    | 32.55 |
| 73          | 4-07-0002      | 猪油<br>lard                  |                                                              | 99.0         | 0.0          | ≥ 98         | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 9.11    | 38.11 |
| 74          | 4-07-0003      | 家禽脂肪<br>poultry fat         |                                                              | 99.0         | 0.0          | ≥ 98         | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 9.36    | 39.16 |

表 14 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name     | 饲料描述<br>Description         | 干物质<br>DM, % | 粗蛋白<br>CP, % | 粗脂肪<br>EE, % | 粗纤维<br>CF, % | 无氮<br>浸出物<br>NFE, % | 粗灰分<br>Ash, % | 中洗<br>纤维<br>NDF, % | 酸洗<br>纤维<br>ADF, % | 钙<br>Ca, % | 总磷<br>P, % | 非植酸磷<br>N-Phy-P,<br>% | 鸡代谢能 ME |       |
|-------------|----------------|-----------------------|-----------------------------|--------------|--------------|--------------|--------------|---------------------|---------------|--------------------|--------------------|------------|------------|-----------------------|---------|-------|
|             |                |                       |                             |              |              |              |              |                     |               |                    |                    |            |            |                       | Mcal/kg | MJ/kg |
| 75          | 4-07-0004      | 鱼油<br>fish oil        |                             | 99.0         | 0.0          | ≥98          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 8.45    | 35.35 |
| 76          | 4-07-0005      | 菜籽油<br>vegetable oil  |                             | 99.0         | 0.0          | ≥98          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 9.21    | 38.53 |
| 77          | 4-07-0006      | 椰子油<br>coconut oil    |                             | 99.0         | 0.0          | ≥98          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 8.81    | 36.76 |
| 78          | 4-07-0007      | 玉米油<br>corn oil       |                             | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 9.66    | 40.42 |
| 79          | 4-17-0008      | 棉籽油<br>cottonseed oil |                             | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | —       | —     |
| 80          | 4-17-0009      | 棕榈油<br>palm oil       |                             | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 5.80    | 24.27 |
| 81          | 4-17-0010      | 花生油<br>peanuts oil    |                             | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 9.36    | 39.16 |
| 82          | 4-17-0011      | 芝麻油<br>sesame oil     |                             | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | —       | —     |
| 83          | 4-17-0012      | 大豆油<br>soybean oil    | 粗制<br>semifinished products | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 8.37    | 35.02 |
| 84          | 4-17-0013      | 葵花油<br>sunflower oil  |                             | 100.0        | 0.0          | ≥99          | 0.0          | —                   | —             | —                  | —                  | 0.00       | 0.00       | 0.00                  | 9.66    | 40.42 |

表 15 饲料中氨基酸含量

Table 15 Amino Acids Contents in Feeds

| 序号<br>(No.) | 中国<br>饲料号<br>(CFN) | 饲料名称<br>Feed Name            | 干物质<br>DM, % | 粗蛋白<br>CP, % | 精氨酸<br>Arg, % | 组氨酸<br>His, % | 异亮氨酸<br>Ile, % | 亮氨酸<br>Leu, % | 赖氨酸<br>Lys, % | 蛋氨酸<br>Met, % | 胱氨酸<br>Cys, % | 苯丙氨酸<br>Phe, % | 酪氨酸<br>Tyr, % | 苏氨酸<br>Thr, % | 色氨酸<br>Trp, % | 缬氨酸<br>Val, % |
|-------------|--------------------|------------------------------|--------------|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|
| 1           | 4-07-0278          | 玉米 corn grain                | 86.0         | 9.4          | 0.38          | 0.23          | 0.26           | 1.03          | 0.26          | 0.19          | 0.22          | 0.43           | 0.34          | 0.31          | 0.08          | 0.40          |
| 2           | 4-07-0288          | 玉米 corn grain                | 86.0         | 8.5          | 0.50          | 0.29          | 0.27           | 0.74          | 0.36          | 0.15          | 0.18          | 0.37           | 0.28          | 0.30          | 0.08          | 0.46          |
| 3           | 4-07-0279          | 玉米 corn grain                | 86.0         | 8.7          | 0.39          | 0.21          | 0.25           | 0.93          | 0.24          | 0.18          | 0.20          | 0.41           | 0.33          | 0.30          | 0.07          | 0.38          |
| 4           | 4-07-0280          | 玉米 corn grain                | 86.0         | 7.8          | 0.37          | 0.20          | 0.24           | 0.93          | 0.23          | 0.15          | 0.15          | 0.38           | 0.31          | 0.29          | 0.06          | 0.35          |
| 5           | 4-07-0272          | 高粱 sorghum grain             | 86.0         | 9.0          | 0.33          | 0.18          | 0.35           | 1.08          | 0.18          | 0.17          | 0.12          | 0.45           | 0.32          | 0.26          | 0.08          | 0.44          |
| 6           | 4-07-0270          | 小麦 wheat grain               | 87.0         | 13.9         | 0.58          | 0.27          | 0.44           | 0.80          | 0.30          | 0.25          | 0.24          | 0.58           | 0.37          | 0.33          | 0.15          | 0.56          |
| 7           | 4-07-0274          | 大麦(裸) naked barley grain     | 87.0         | 13.0         | 0.64          | 0.16          | 0.43           | 0.87          | 0.44          | 0.14          | 0.25          | 0.68           | 0.40          | 0.43          | 0.16          | 0.63          |
| 8           | 4-07-0277          | 大麦(皮) barley grain           | 87.0         | 11.0         | 0.65          | 0.24          | 0.52           | 0.91          | 0.42          | 0.18          | 0.18          | 0.59           | 0.35          | 0.41          | 0.12          | 0.64          |
| 9           | 4-07-0281          | 黑麦 rye                       | 88.0         | 11.0         | 0.50          | 0.25          | 0.40           | 0.64          | 0.37          | 0.16          | 0.25          | 0.49           | 0.26          | 0.34          | 0.12          | 0.52          |
| 10          | 4-07-0273          | 稻谷 paddy                     | 86.0         | 7.8          | 0.57          | 0.15          | 0.32           | 0.58          | 0.29          | 0.19          | 0.16          | 0.40           | 0.37          | 0.25          | 0.10          | 0.47          |
| 11          | 4-07-0276          | 糙米 rough rice                | 87.0         | 8.8          | 0.65          | 0.17          | 0.30           | 0.61          | 0.32          | 0.20          | 0.14          | 0.35           | 0.31          | 0.28          | 0.12          | 0.49          |
| 12          | 4-07-0275          | 碎米 broken rice               | 88.0         | 10.4         | 0.78          | 0.27          | 0.39           | 0.74          | 0.42          | 0.22          | 0.17          | 0.49           | 0.39          | 0.38          | 0.12          | 0.57          |
| 13          | 4-07-0479          | 粟(谷子) millet grain           | 86.5         | 9.7          | 0.30          | 0.20          | 0.36           | 1.15          | 0.15          | 0.25          | 0.20          | 0.49           | 0.26          | 0.35          | 0.17          | 0.42          |
| 14          | 4-04-0067          | 木薯干 cassava tuber flake      | 87.0         | 2.5          | 0.40          | 0.05          | 0.11           | 0.15          | 0.13          | 0.05          | 0.04          | 0.10           | 0.04          | 0.10          | 0.03          | 0.13          |
| 15          | 4-04-0068          | 甘薯 sweet potato tuber flake  | 87.0         | 4.0          | 0.16          | 0.08          | 0.17           | 0.26          | 0.16          | 0.06          | 0.08          | 0.19           | 0.13          | 0.18          | 0.05          | 0.27          |
| 16          | 4-08-0104          | 次粉 wheat middling and reddog | 88.0         | 15.4         | 0.86          | 0.41          | 0.55           | 1.06          | 0.59          | 0.23          | 0.37          | 0.66           | 0.46          | 0.50          | 0.21          | 0.72          |
| 17          | 4-08-0105          | 次粉 wheat middling and reddog | 87.0         | 13.6         | 0.85          | 0.33          | 0.48           | 0.98          | 0.52          | 0.16          | 0.33          | 0.63           | 0.45          | 0.50          | 0.18          | 0.68          |
| 18          | 4-08-0069          | 小麦麸 wheat bran               | 87.0         | 15.7         | 0.97          | 0.39          | 0.46           | 0.81          | 0.58          | 0.13          | 0.26          | 0.58           | 0.28          | 0.43          | 0.20          | 0.63          |
| 19          | 4-08-0070          | 小麦麸 wheat bran               | 87.0         | 14.3         | 0.88          | 0.35          | 0.42           | 0.74          | 0.53          | 0.12          | 0.24          | 0.53           | 0.25          | 0.39          | 0.18          | 0.57          |
| 20          | 4-08-0041          | 米糠 rice bran                 | 87.0         | 12.8         | 1.06          | 0.39          | 0.63           | 1.00          | 0.74          | 0.25          | 0.19          | 0.63           | 0.50          | 0.48          | 0.14          | 0.81          |
| 21          | 4-10-0025          | 米糠饼 rice bran meal(exp.)     | 88.0         | 14.7         | 1.19          | 0.43          | 0.72           | 1.06          | 0.66          | 0.26          | 0.30          | 0.76           | 0.51          | 0.53          | 0.15          | 0.99          |
| 22          | 4-10-0018          | 米糠粕 rice bran meal(sol.)     | 87.0         | 15.1         | 1.28          | 0.46          | 0.78           | 1.30          | 0.72          | 0.28          | 0.32          | 0.82           | 0.55          | 0.57          | 0.17          | 1.07          |
| 23          | 5-09-0127          | 大豆 soybeans                  | 87.0         | 35.5         | 2.57          | 0.59          | 1.28           | 2.72          | 2.20          | 0.56          | 0.70          | 1.42           | 0.64          | 1.41          | 0.45          | 1.50          |
| 24          | 5-09-0128          | 全脂大豆 full-fat soybeans       | 88.0         | 35.5         | 2.63          | 0.63          | 1.32           | 2.68          | 2.37          | 0.55          | 0.76          | 1.39           | 0.67          | 1.42          | 0.49          | 1.53          |

表 15 (续)

| 序号<br>(No.) | 中国<br>饲料号<br>(CFN) | 饲料名称<br>Feed Name                        | 干物质<br>DM, % | 粗蛋白<br>CP, % | 精氨酸<br>Arg, % | 组氨酸<br>His, % | 异亮氨酸<br>Ile, % | 亮氨酸<br>Leu, % | 赖氨酸<br>Lys, % | 蛋氨酸<br>Met, % | 胱氨酸<br>Cys, % | 苯丙氨酸<br>Phe, % | 酪氨酸<br>Tyr, % | 苏氨酸<br>Thr, % | 色氨酸<br>Trp, % | 缬氨酸<br>Val, % |
|-------------|--------------------|------------------------------------------|--------------|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|
| 25          | 5-10-0241          | 大豆饼 soybean meal(exp.)                   | 89.0         | 41.8         | 2.53          | 1.10          | 1.57           | 2.75          | 2.43          | 0.60          | 0.62          | 1.79           | 1.53          | 1.44          | 0.64          | 1.70          |
| 26          | 5-10-0103          | 大豆粕 soybean meal(sol.)                   | 89.0         | 47.9         | 3.67          | 1.36          | 2.05           | 3.74          | 2.87          | 0.67          | 0.73          | 2.52           | 1.69          | 1.93          | 0.69          | 2.15          |
| 27          | 5-10-0102          | 大豆粕 soybean meal(sol.)                   | 89.0         | 44.0         | 3.19          | 1.09          | 1.80           | 3.26          | 2.66          | 0.62          | 0.68          | 2.23           | 1.57          | 1.92          | 0.64          | 1.99          |
| 28          | 5-10-0118          | 棉籽饼 cottonseed meal(exp.)                | 88.0         | 36.3         | 3.94          | 0.90          | 1.16           | 2.07          | 1.40          | 0.41          | 0.70          | 1.88           | 0.95          | 1.14          | 0.39          | 1.51          |
| 29          | 5-10-0119          | 棉籽粕 cottonseed meal(sol.)                | 88.0         | 47.0         | 4.98          | 1.26          | 1.40           | 2.67          | 2.13          | 0.56          | 0.66          | 2.43           | 1.11          | 1.35          | 0.54          | 2.05          |
| 30          | 5-10-0117          | 棉籽粕 cottonseed meal(sol.)                | 90.0         | 43.5         | 4.65          | 1.19          | 1.29           | 2.47          | 1.97          | 0.58          | 0.68          | 2.28           | 1.05          | 1.25          | 0.51          | 1.91          |
| 31          | 5-10-0183          | 菜籽饼 rapeseed meal(exp.)                  | 88.0         | 35.7         | 1.82          | 0.83          | 1.24           | 2.26          | 1.33          | 0.60          | 0.82          | 1.35           | 0.92          | 1.40          | 0.42          | 1.62          |
| 32          | 5-10-0121          | 菜籽粕 rapeseed meal(sol.)                  | 88.0         | 38.6         | 1.83          | 0.86          | 1.29           | 2.34          | 1.30          | 0.63          | 0.87          | 1.45           | 0.97          | 1.49          | 0.43          | 1.74          |
| 33          | 5-10-0116          | 花生仁饼 peanut meal(exp.)                   | 88.0         | 44.7         | 4.60          | 0.83          | 1.18           | 2.36          | 1.32          | 0.39          | 0.38          | 1.81           | 1.31          | 1.05          | 0.42          | 1.28          |
| 34          | 5-10-0115          | 花生仁粕 peanut meal(sol.)                   | 88.0         | 47.8         | 4.88          | 0.88          | 1.25           | 2.50          | 1.40          | 0.41          | 0.40          | 1.92           | 1.39          | 1.11          | 0.45          | 1.36          |
| 35          | 1-10-0031          | 向日葵仁饼 sunflower meal(exp.)               | 88.0         | 29.0         | 2.44          | 0.62          | 1.19           | 1.76          | 0.96          | 0.59          | 0.43          | 1.21           | 0.77          | 0.98          | 0.28          | 1.35          |
| 36          | 5-10-0242          | 向日葵仁粕 sunflower meal(sol.)               | 88.0         | 36.5         | 3.17          | 0.81          | 1.51           | 2.25          | 1.22          | 0.72          | 0.62          | 1.56           | 0.99          | 1.25          | 0.47          | 1.72          |
| 37          | 5-10-0243          | 向日葵仁粕 sunflower meal(sol.)               | 88.0         | 33.6         | 2.89          | 0.74          | 1.39           | 2.07          | 1.13          | 0.69          | 0.50          | 1.43           | 0.91          | 1.14          | 0.37          | 1.58          |
| 38          | 5-10-0119          | 亚麻仁饼 linseed meal(exp.)                  | 88.0         | 32.2         | 2.35          | 0.51          | 1.15           | 1.62          | 0.73          | 0.46          | 0.48          | 1.32           | 0.50          | 1.00          | 0.48          | 1.44          |
| 39          | 5-10-0120          | 亚麻仁粕 linseed meal(sol.)                  | 88.0         | 34.8         | 3.59          | 0.64          | 1.33           | 1.85          | 1.16          | 0.55          | 0.55          | 1.51           | 0.93          | 1.10          | 0.70          | 1.51          |
| 40          | 5-10-0246          | 芝麻饼 sesame meal(exp.)                    | 92.0         | 39.2         | 2.38          | 0.81          | 1.42           | 2.52          | 0.82          | 0.82          | 0.75          | 1.68           | 1.02          | 1.29          | 0.49          | 1.84          |
| 41          | 5-11-0001          | 玉米蛋白粉 corn gluten meal                   | 90.1         | 63.5         | 1.90          | 1.18          | 2.85           | 11.59         | 0.97          | 1.42          | 0.96          | 4.10           | 3.19          | 2.08          | 0.36          | 2.98          |
| 42          | 5-11-0002          | 玉米蛋白粉 corn gluten meal                   | 91.2         | 51.3         | 1.48          | 0.89          | 1.75           | 7.87          | 0.92          | 1.14          | 0.76          | 2.83           | 2.25          | 1.59          | 0.31          | 2.05          |
| 43          | 5-11-0008          | 玉米蛋白粉 corn gluten meal                   | 89.9         | 44.3         | 1.31          | 0.78          | 1.63           | 7.08          | 0.71          | 1.04          | 0.65          | 2.61           | 2.03          | 1.38          | —             | 1.84          |
| 44          | 5-11-0003          | 玉米蛋白饲料 corn gluten feed                  | 88.0         | 19.3         | 0.77          | 0.56          | 0.62           | 1.82          | 0.63          | 0.29          | 0.33          | 0.70           | 0.50          | 0.68          | 0.14          | 0.93          |
| 45          | 4-10-0026          | 玉米胚芽饼 corn germ meal(exp.)               | 90.0         | 16.7         | 1.16          | 0.45          | 0.53           | 1.25          | 0.70          | 0.31          | 0.47          | 0.64           | 0.54          | 0.64          | 0.16          | 0.91          |
| 46          | 4-10-0244          | 玉米胚芽粕 corn germ meal(sol.)               | 90.0         | 20.8         | 1.51          | 0.62          | 0.77           | 1.54          | 0.75          | 0.21          | 0.28          | 0.93           | 0.66          | 0.68          | 0.18          | 1.66          |
| 47          | 5-11-0007          | DDGS corn distiller's grain with soluble | 90.0         | 28.3         | 0.98          | 0.59          | 0.98           | 2.63          | 0.59          | 0.59          | 0.39          | 1.93           | 1.37          | 0.92          | 0.19          | 1.30          |
| 48          | 5-11-0009          | 蚕豆粉浆蛋白粉 broad bean gluten meal           | 88.0         | 66.3         | 5.96          | 1.66          | 2.90           | 5.88          | 4.44          | 0.60          | 0.57          | 3.34           | 2.21          | 2.31          | —             | 3.20          |
| 49          | 5-11-0004          | 麦芽根 barley malt sprouts                  | 89.7         | 28.3         | 1.22          | 0.54          | 1.08           | 1.58          | 1.30          | 0.37          | 0.26          | 0.85           | 0.67          | 0.96          | 0.42          | 1.44          |

表 15 (续)

| 序号<br>(No.) | 中国<br>饲料号<br>(CFN) | 饲料名称<br>Feed Name            | 干物质<br>DM, % | 粗蛋白<br>CP, % | 精氨酸<br>Arg, % | 组氨酸<br>His, % | 异亮氨酸<br>Ile, % | 亮氨酸<br>Leu, % | 赖氨酸<br>Lys, % | 蛋氨酸<br>Met, % | 胱氨酸<br>Cys, % | 苯丙氨酸<br>Phe, % | 酪氨酸<br>Tyr, % | 苏氨酸<br>Thr, % | 色氨酸<br>Trp, % | 缬氨酸<br>Val, % |
|-------------|--------------------|------------------------------|--------------|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|
| 50          | 5-13-0044          | 鱼粉(CP64.5%) fish meal        | 90.0         | 64.5         | 3.91          | 1.75          | 2.68           | 4.99          | 5.22          | 1.71          | 0.58          | 2.71           | 2.13          | 2.87          | 0.78          | 3.25          |
| 51          | 5-13-0045          | 鱼粉(CP62.5%) fish meal        | 90.0         | 62.5         | 3.86          | 1.83          | 2.79           | 5.06          | 5.12          | 1.66          | 0.55          | 2.67           | 2.01          | 2.78          | 0.75          | 3.14          |
| 52          | 5-13-0046          | 鱼粉(CP60.2%) fish meal        | 90.0         | 60.2         | 3.57          | 1.71          | 2.68           | 4.80          | 4.72          | 1.64          | 0.52          | 2.35           | 1.96          | 2.57          | 0.70          | 3.17          |
| 53          | 5-13-0077          | 鱼粉(CP53.5%) fish meal        | 90.0         | 53.5         | 3.24          | 1.29          | 2.30           | 4.30          | 3.87          | 1.39          | 0.49          | 2.22           | 1.70          | 2.51          | 0.60          | 2.77          |
| 52          | 5-13-0036          | 血粉 blood meal                | 88.0         | 82.8         | 2.99          | 4.40          | 0.75           | 8.38          | 6.67          | 0.74          | 0.98          | 5.23           | 2.55          | 2.86          | 1.11          | 6.08          |
| 53          | 5-13-0037          | 羽毛粉 feather meal             | 88.0         | 77.9         | 5.30          | 0.58          | 4.21           | 6.78          | 1.65          | 0.59          | 2.93          | 3.57           | 1.79          | 3.51          | 0.40          | 6.05          |
| 54          | 5-13-0038          | 皮革粉 leather meal             | 88.0         | 74.7         | 4.45          | 0.40          | 1.06           | 2.53          | 2.18          | 0.80          | 0.16          | 1.56           | 0.63          | 0.71          | 0.50          | 1.91          |
| 55          | 5-13-0047          | 肉骨粉 meat and bone meal       | 93.0         | 50.0         | 3.35          | 0.96          | 1.70           | 3.20          | 2.60          | 0.67          | 0.33          | 1.70           | —             | 1.63          | 0.26          | 2.25          |
| 56          | 5-13-0048          | 肉粉 meat meal                 | 94.0         | 54.0         | 3.60          | 1.14          | 1.60           | 3.84          | 3.07          | 0.80          | 0.60          | 2.17           | 1.40          | 1.97          | 0.35          | 2.66          |
| 57          | 1-05-0074          | 苜蓿草粉(CP19%) alfalfa meal     | 87.0         | 19.1         | 0.78          | 0.39          | 0.68           | 1.20          | 0.82          | 0.21          | 0.22          | 0.82           | 0.58          | 0.74          | 0.43          | 0.91          |
| 58          | 1-05-0075          | 苜蓿草粉(CP17%) alfalfa meal     | 87.0         | 17.2         | 0.74          | 0.32          | 0.66           | 1.10          | 0.81          | 0.20          | 0.16          | 0.81           | 0.54          | 0.69          | 0.37          | 0.85          |
| 59          | 1-05-0076          | 苜蓿草粉(CP14%~15%) alfalfa meal | 87.0         | 14.3         | 0.61          | 0.19          | 0.58           | 1.00          | 0.60          | 0.18          | 0.15          | 0.59           | 0.38          | 0.45          | 0.24          | 0.58          |
| 60          | 5-11-0005          | 啤酒糟 brewers dried grain      | 88.0         | 24.3         | 0.98          | 0.51          | 1.18           | 1.08          | 0.72          | 0.52          | 0.35          | 2.35           | 1.17          | 0.81          | —             | 1.66          |
| 61          | 7-15-0001          | 啤酒酵母 brewers dried yeast     | 91.7         | 52.4         | 2.67          | 1.11          | 2.85           | 4.76          | 3.38          | 0.83          | 0.50          | 4.07           | 0.12          | 2.33          | 2.08          | 3.40          |
| 62          | 4-13-0075          | 乳清粉 whey, dehydrated         | 94.0         | 12.0         | 0.40          | 0.20          | 0.90           | 1.20          | 1.10          | 0.20          | 0.30          | 0.40           | —             | 0.80          | 0.20          | 0.70          |
| 63          | 5-01-0162          | 酪蛋白 casein                   | 91.0         | 88.7         | 3.26          | 2.82          | 4.66           | 8.79          | 7.35          | 2.70          | 0.41          | 4.79           | 4.77          | 3.98          | 1.14          | 6.10          |
| 64          | 5-14-0503          | 明胶 gelatin                   | 90.0         | 88.6         | 6.60          | 0.66          | 1.42           | 2.91          | 3.62          | 0.76          | 0.12          | 1.74           | 0.43          | 1.82          | 0.05          | 2.26          |
| 65          | 4-06-0076          | 牛奶乳糖 milk lactose            | 96.0         | 4.0          | 0.29          | 0.10          | 0.10           | 0.18          | 0.16          | 0.03          | 0.04          | 0.10           | 0.02          | 0.10          | 0.10          | 0.10          |

注：“—”表示未测值，下同

“—” unmeasured, the same below

表 16 饲料中矿物质及维生素含量

Table 16 Minerals and Vitamins Contents in Feeds

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name            | 钠<br>Na | 氯<br>Cl | 镁<br>Mg | 钾<br>K | 铁<br>Fe   | 铜<br>Cu   | 锰<br>Mn   | 锌<br>Zn   | 硒<br>Se   | 胡萝卜素<br>carotene | 维生素<br>E  | 维生素<br>B <sub>1</sub> | 维生素<br>B <sub>2</sub> | 泛酸<br>Panto-<br>then-<br>ic Acid | 烟酸<br>Niacin | 生物<br>素<br>Biotin | 叶酸<br>Folic<br>Acid | 胆碱<br>Chol-<br>ine | 维生素<br>B <sub>6</sub> | 维生素<br>B <sub>12</sub> | 亚油酸<br>Linoleic<br>Acid |
|-------------|----------------|------------------------------|---------|---------|---------|--------|-----------|-----------|-----------|-----------|-----------|------------------|-----------|-----------------------|-----------------------|----------------------------------|--------------|-------------------|---------------------|--------------------|-----------------------|------------------------|-------------------------|
|             |                |                              | %       | %       | %       | %      | mg/<br>kg | mg/<br>kg | mg/<br>kg | mg/<br>kg | mg/<br>kg | mg/<br>kg        | mg/<br>kg | mg/<br>kg             | mg/<br>kg             | mg/<br>kg                        | mg/<br>kg    | mg/<br>kg         | mg/<br>kg           | mg/<br>kg          | mg/<br>kg             | μg/<br>kg              | %                       |
| 1           | 4-07-0278      | 玉米 corn grain                | 0.010   | 0.040   | 0.110   | 0.29   | 36        | 3.4       | 5.8       | 21.1      | 0.04      | —                | 22.0      | 3.5                   | 1.1                   | 5.0                              | 24.0         | 0.06              | 0.15                | 620                | 10.0                  | —                      | 2.20                    |
| 2           | 4-07-0288      | 玉米 corn grain                | 0.010   | 0.040   | 0.110   | 0.29   | 36        | 3.4       | 5.8       | 21.1      | 0.04      | —                | 22.0      | 3.5                   | 1.1                   | 5.0                              | 24.0         | 0.06              | 0.15                | 620                | 10.0                  | —                      | 2.20                    |
| 3           | 4-07-0279      | 玉米 corn grain                | 0.020   | 0.040   | 0.120   | 0.30   | 37        | 3.3       | 6.1       | 19.2      | 0.03      | 0.8              | 22.0      | 2.6                   | 1.1                   | 3.9                              | 21.0         | 0.08              | 0.12                | 620                | 10.0                  | 0.0                    | 2.20                    |
| 4           | 4-07-0280      | 玉米 corn grain                | 0.020   | 0.040   | 0.120   | 0.30   | 37        | 3.3       | 6.1       | 19.2      | 0.03      | —                | 22.0      | 2.6                   | 1.1                   | 3.9                              | 21.0         | 0.08              | 0.12                | 620                | 10.0                  | —                      | 2.20                    |
| 5           | 4-07-0272      | 高粱 sorghum grain             | 0.030   | 0.090   | 0.150   | 0.34   | 87        | 7.6       | 17.1      | 20.1      | 0.05      | —                | 7.0       | 3.0                   | 1.3                   | 12.4                             | 41.0         | 0.26              | 0.20                | 668                | 5.2                   | 0.0                    | 1.13                    |
| 6           | 4-07-0270      | 小麦 wheat grain               | 0.060   | 0.070   | 0.110   | 0.50   | 88        | 7.9       | 45.9      | 29.7      | 0.05      | 0.4              | 13.0      | 4.6                   | 1.3                   | 11.9                             | 51.0         | 0.11              | 0.36                | 1 040              | 3.7                   | 0.0                    | 0.59                    |
| 7           | 4-07-0274      | 大麦 (裸) naked barley grain    | 0.04    | —       | 0.110   | 0.60   | 100       | 7.0       | 18.0      | 30.0      | 0.16      | —                | 48.0      | 4.1                   | 1.4                   | —                                | 87.0         | —                 | —                   | —                  | 19.3                  | 0.0                    | —                       |
| 8           | 4-07-0277      | 大麦 (皮) barley grain          | 0.020   | 0.150   | 0.140   | 0.56   | 87        | 5.6       | 17.5      | 23.6      | 0.06      | 4.1              | 20.0      | 4.5                   | 1.8                   | 8.0                              | 55.0         | 0.15              | 0.07                | 990                | 4.0                   | 0.0                    | 0.83                    |
| 9           | 4-07-0281      | 黑麦 rye                       | 0.020   | 0.040   | 0.120   | 0.42   | 117       | 7.0       | 53.0      | 35.0      | 0.40      | —                | 15.0      | 3.6                   | 1.5                   | 8.0                              | 16.0         | 0.06              | 0.60                | 440                | 2.6                   | 0.0                    | 0.76                    |
| 10          | 4-07-0273      | 稻谷 paddy                     | 0.040   | 0.070   | 0.070   | 0.34   | 40        | 3.5       | 20.0      | 8.0       | 0.04      | —                | 16.0      | 3.1                   | 1.2                   | 3.7                              | 34.0         | 0.08              | 0.45                | 900                | 28.0                  | 0.0                    | 0.28                    |
| 11          | 4-07-0276      | 糙米 rough rice                | 0.040   | 0.060   | 0.140   | 0.34   | 78        | 3.3       | 21.0      | 10.0      | 0.07      | —                | 13.5      | 2.8                   | 1.1                   | 11.0                             | 30.0         | 0.08              | 0.40                | 1014               | —                     | —                      | —                       |
| 12          | 4-07-0275      | 碎米 broken rice               | 0.070   | 0.080   | 0.110   | 0.13   | 62        | 8.8       | 47.5      | 36.4      | 0.06      | —                | 14.0      | 1.4                   | 0.7                   | 8.0                              | 30.0         | 0.08              | 0.20                | 800                | 28.0                  | —                      | —                       |
| 13          | 4-07-0479      | 粟 (谷子) millet grain          | 0.040   | 0.140   | 0.160   | 0.43   | 270       | 24.5      | 22.5      | 15.9      | 0.08      | 1.2              | 36.3      | 6.6                   | 1.6                   | 7.4                              | 53.0         | —                 | 15.00               | 790                | —                     | —                      | 0.84                    |
| 14          | 4-04-0067      | 木薯干 cassava tuber flake      | —       | —       | —       | —      | 150       | 4.2       | 6.0       | 14.0      | 0.04      | —                | —         | —                     | —                     | —                                | —            | —                 | —                   | —                  | —                     | —                      | —                       |
| 15          | 4-04-0068      | 甘薯干 sweet potato tuber flake | —       | —       | 0.08    | —      | 107       | 6.1       | 10.0      | 9.0       | 0.07      | —                | —         | —                     | —                     | —                                | —            | —                 | —                   | —                  | —                     | —                      | —                       |
| 16          | 4-08-0104      | 次粉 wheat middling and reddog | 0.600   | 0.040   | 0.410   | 0.60   | 140       | 11.6      | 94.2      | 73.0      | 0.07      | 3.0              | 20.0      | 16.5                  | 1.8                   | 15.6                             | 72.0         | 0.33              | 0.76                | 1 187              | 9.0                   | —                      | 1.74                    |
| 17          | 4-08-0105      | 次粉 wheat middling and reddog | 0.600   | 0.040   | 0.410   | 0.60   | 140       | 11.6      | 94.2      | 73.0      | 0.07      | 3.0              | 20.0      | 16.5                  | 1.8                   | 15.6                             | 72.0         | 0.33              | 0.76                | 1 187              | 9.0                   | —                      | 1.74                    |
| 18          | 4-08-0069      | 小麦麸 wheat bran               | 0.070   | 0.070   | 0.521   | 1.19   | 170       | 13.8      | 104.3     | 96.5      | 0.07      | 1.0              | 14.0      | 8.0                   | 4.6                   | 31.0                             | 186.0        | 0.36              | 0.63                | 980                | 7.0                   | 0.0                    | 1.70                    |
| 19          | 4-08-0070      | 小麦麸 wheat bran               | 0.070   | 0.070   | 0.471   | 1.19   | 157       | 16.5      | 80.6      | 104.7     | 0.05      | 1.0              | 14.0      | 8.0                   | 4.6                   | 31.0                             | 186.0        | 0.36              | 0.63                | 980                | 7.0                   | 0.0                    | 1.70                    |
| 20          | 4-08-0041      | 米糠 rice bran                 | 0.070   | 0.070   | 0.901   | 1.73   | 304       | 7.1       | 175.9     | 50.3      | 0.09      | —                | 60.0      | 22.5                  | 2.5                   | 23.0                             | 293.0        | 0.42              | 2.20                | 1 135              | 14.0                  | 0.0                    | 3.57                    |
| 21          | 4-10-0025      | 米糠饼 rice bran meal (exp.)    | 0.08    | —       | 1.261   | 1.80   | 400       | 8.7       | 211.6     | 56.4      | 0.09      | —                | 11.0      | 24.0                  | 2.9                   | 94.9                             | 689.0        | 0.70              | 0.88                | 1 700              | 54.0                  | 40.0                   | —                       |
| 22          | 4-10-0018      | 米糠粕 rice bran meal (sol.)    | 0.09    | —       | —       | —      | 1 804     | 9.4       | 228.4     | 60.9      | 0.10      | —                | —         | —                     | —                     | —                                | —            | —                 | —                   | —                  | —                     | —                      | —                       |

表 16 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name           | 钠<br>Na | 氯<br>Cl | 镁<br>Mg | 钾<br>K | 铁<br>Fe   | 铜<br>Cu   | 锰<br>Mn   | 锌<br>Zn   | 硒<br>Se   | 胡萝卜素<br>carotene | 维生素 E     | 维生素 B <sub>1</sub> | 维生素 B <sub>2</sub> | 泛酸<br>Pantothenic Acid | 烟酸<br>Niacin | 生物素<br>Biotin | 叶酸<br>Folic Acid | 胆碱<br>Choline | 维生素 B <sub>6</sub> | 维生素 B <sub>12</sub> | 亚油酸<br>Linoleic Acid |
|-------------|----------------|-----------------------------|---------|---------|---------|--------|-----------|-----------|-----------|-----------|-----------|------------------|-----------|--------------------|--------------------|------------------------|--------------|---------------|------------------|---------------|--------------------|---------------------|----------------------|
|             |                |                             | %       | %       | %       | %      | mg/<br>kg | mg/<br>kg | mg/<br>kg | mg/<br>kg | mg/<br>kg | mg/<br>kg        | mg/<br>kg | mg/<br>kg          | mg/<br>kg          | mg/<br>kg              | mg/<br>kg    | mg/<br>kg     | mg/<br>kg        | mg/<br>kg     | mg/<br>kg          | μg/<br>kg           | %                    |
| 23          | 5-09-0127      | 大豆 soybeans                 | 0.020   | 0.030   | 0.28    | 1.70   | 111       | 18.1      | 21.5      | 40.7      | 0.06      | —                | 40.0      | 12.3               | 2.9                | 17.4                   | 24.0         | 0.42          | —                | 3 200         | 12.0               | —                   | 8.00                 |
| 24          | 5-09-0128      | 全脂大豆 full-fat soybeans      | 0.020   | 0.030   | 0.28    | 1.70   | 111       | 18.1      | 21.5      | 40.7      | 0.06      | —                | 40.0      | 12.3               | 2.9                | 17.4                   | 24.0         | 0.42          | —                | 3 200         | 12.0               | —                   | 8.00                 |
| 25          | 5-10-0241      | 大豆饼 soybean meal (exp.)     | 0.020   | 0.020   | 0.25    | 1.77   | 187       | 19.8      | 32.0      | 43.4      | 0.04      | —                | 6.6       | 1.7                | 4.4                | 13.8                   | 37.0         | 0.32          | 0.45             | 2 673         | —                  | —                   | —                    |
| 26          | 5-10-0103      | 大豆粕 soybean meal (sol.)     | 0.030   | 0.050   | 0.28    | 2.05   | 185       | 24.0      | 38.2      | 46.4      | 0.10      | 0.2              | 3.1       | 4.6                | 3.0                | 16.4                   | 30.7         | 0.33          | 0.81             | 2 858         | 6.10               | 0.0                 | 0.51                 |
| 27          | 5-10-0102      | 大豆粕 soybean meal (sol.)     | 0.030   | 0.050   | 0.28    | 1.72   | 185       | 24.0      | 28.0      | 46.4      | 0.06      | 0.2              | 3.1       | 4.6                | 3.0                | 16.4                   | 30.7         | 0.33          | 0.81             | 2 858         | 6.10               | 0.0                 | 0.51                 |
| 28          | 5-10-0118      | 棉籽饼 cottonseed meal (exp.)  | 0.040   | 0.140   | 0.52    | 1.20   | 266       | 11.6      | 17.8      | 44.9      | 0.11      | 0.2              | 16.0      | 6.4                | 5.1                | 10.0                   | 38.0         | 0.53          | 1.65             | 2 753         | 5.30               | 0.0                 | 2.47                 |
| 29          | 5-10-0119      | 棉籽粕 cottonseed meal (sol.)  | 0.040   | 0.040   | 0.40    | 1.16   | 263       | 14.0      | 18.7      | 55.5      | 0.15      | 0.2              | 15.0      | 7.0                | 5.5                | 12.0                   | 40.0         | 0.30          | 2.51             | 2 933         | 5.10               | 0.0                 | 1.51                 |
| 30          | 5-10-0117      | 棉籽粕 cottonseed meal (sol.)  | 0.040   | 0.040   | 0.40    | 1.16   | 263       | 14.0      | 18.7      | 55.5      | 0.15      | 0.2              | 15.0      | 7.0                | 5.5                | 12.0                   | 40.0         | 0.30          | 2.51             | 2 933         | 5.10               | 0.0                 | 1.51                 |
| 31          | 5-10-0183      | 菜籽饼 rapeseed meal (exp.)    | 0.02    | —       | —       | 1.34   | 687       | 7.2       | 78.1      | 59.2      | 0.29      | —                | —         | —                  | —                  | —                      | —            | —             | —                | —             | —                  | —                   | —                    |
| 32          | 5-10-0121      | 菜籽粕 rapeseed meal (sol.)    | 0.090   | 0.110   | 0.51    | 1.40   | 653       | 7.1       | 82.2      | 67.5      | 0.16      | —                | 54.0      | 5.2                | 3.7                | 9.5                    | 160.0        | 0.98          | 0.95             | 6700          | 7.20               | 0.0                 | 0.42                 |
| 33          | 5-10-0116      | 花生仁饼 peanut meal (exp.)     | 0.040   | 0.030   | 0.33    | 1.14   | 347       | 23.7      | 36.7      | 52.5      | 0.06      | —                | 3.0       | 7.1                | 5.2                | 47.0                   | 166.0        | 0.33          | 0.40             | 1 655         | 10.00              | 0.0                 | 1.43                 |
| 34          | 5-10-0115      | 花生仁粕 peanut meal (sol.)     | 0.070   | 0.030   | 0.31    | 1.23   | 368       | 25.1      | 38.9      | 55.7      | 0.06      | —                | 3.0       | 5.7                | 11.0               | 53.0                   | 173.0        | 0.39          | 0.39             | 1 854         | 10.00              | 0.0                 | 0.24                 |
| 35          | 1-10-0031      | 向日葵仁饼 sunflower meal (exp.) | 0.020   | 0.010   | 0.75    | 1.17   | 424       | 45.6      | 41.5      | 62.1      | 0.09      | —                | 0.9       | —                  | 18.0               | 4.0                    | 86.0         | 1.40          | 0.40             | 800           | —                  | —                   | —                    |
| 36          | 5-10-0242      | 向日葵仁粕 sunflower meal (sol.) | 0.200   | 0.010   | 0.75    | 1.00   | 226       | 32.8      | 34.5      | 82.7      | 0.06      | —                | 0.7       | 4.6                | 2.3                | 39.0                   | 22.0         | 1.70          | 1.60             | 3 260         | 17.20              | —                   | —                    |
| 37          | 5-10-0243      | 向日葵仁粕 sunflower meal (sol.) | 0.200   | 0.100   | 0.68    | 1.23   | 310       | 35.0      | 35.0      | 80.0      | 0.08      | —                | —         | 3.0                | 3.0                | 29.9                   | 14.0         | 1.40          | 1.14             | 3 100         | 11.10              | 0.0                 | 0.98                 |
| 38          | 5-10-0119      | 亚麻仁饼 linseed meal (exp.)    | 0.090   | 0.040   | 0.58    | 1.25   | 204       | 27.0      | 40.3      | 36.0      | 0.18      | —                | 7.7       | 2.6                | 4.1                | 16.5                   | 37.4         | 0.36          | 2.90             | 1 672         | 6.10               | —                   | —                    |
| 39          | 5-10-0120      | 亚麻仁粕 linseed meal (sol.)    | 0.140   | 0.050   | 0.56    | 1.38   | 219       | 25.5      | 43.3      | 38.7      | 0.18      | 0.2              | 5.8       | 7.5                | 3.2                | 14.7                   | 33.0         | 0.41          | 0.34             | 1 512         | 6.00               | 200.0               | 0.36                 |
| 40          | 5-10-0246      | 芝麻饼 sesame meal (exp.)      | 0.040   | 0.050   | 0.50    | 1.39   | —         | 50.4      | 32.0      | 2.4       | —         | 0.2              | —         | 2.8                | 3.6                | 6.0                    | 30.0         | 2.40          | —                | 1 536         | 12.50              | 0.0                 | 1.90                 |
| 41          | 5-11-0001      | 玉米蛋白粉 corn gluten           | 0.010   | 0.050   | 0.080   | 0.30   | 230       | 1.9       | 5.9       | 19.2      | 0.02      | 44.0             | 25.5      | 0.3                | 2.2                | 3.0                    | 55.0         | 0.15          | 0.20             | 330           | 6.90               | 50.0                | 1.17                 |
| 42          | 5-11-0002      | 玉米蛋白粉 corn gluten           | 0.02    | —       | —       | 0.35   | 332       | 10.0      | 78.0      | 49.0      | —         | —                | —         | —                  | —                  | —                      | —            | —             | —                | —             | —                  | —                   | —                    |
| 43          | 5-11-0008      | 玉米蛋白粉 corn gluten           | 0.020   | 0.080   | 0.050   | 0.40   | 400       | 28.0      | 7.0       | —         | 1.00      | 16.0             | 19.9      | 0.2                | 1.5                | 9.6                    | 54.5         | 0.15          | 0.22             | 330           | —                  | —                   | —                    |
| 44          | 5-11-0003      | 玉米蛋白饲料 corn gluten          | 0.120   | 0.220   | 0.42    | 1.30   | 282       | 10.7      | 77.1      | 59.2      | 0.23      | 8.0              | 14.8      | 2.0                | 2.4                | 17.8                   | 75.5         | 0.22          | 0.28             | 1 700         | 13.00              | 250.0               | 1.43                 |
| 45          | 4-10-0026      | 玉米胚芽饼 corn germ meal (exp.) | 0.01    | —       | 0.100   | 0.30   | 99        | 12.8      | 19.0      | 108.1     | —         | 2.0              | 87.0      | —                  | 3.7                | 3.3                    | 42.0         | —             | —                | 1 936         | —                  | —                   | 1.47                 |

表 16 (续)

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name                         | 钠<br>Na<br>% | 氯<br>Cl<br>% | 镁<br>Mg<br>% | 钾<br>K<br>% | 铁<br>Fe<br>mg/kg | 铜<br>Cu<br>mg/kg | 锰<br>Mn<br>mg/kg | 锌<br>Zn<br>mg/kg | 硒<br>Se<br>mg/kg | 胡萝卜素<br>$\beta$ -carotene<br>mg/kg | 维生素 E<br>mg/kg | 维生素 B <sub>1</sub><br>mg/kg | 维生素 B <sub>2</sub><br>mg/kg | 泛酸<br>Pantothenic Acid<br>mg/kg | 烟酸<br>Niacin<br>mg/kg | 生物素<br>Biotin<br>mg/kg | 叶酸<br>Folic Acid<br>mg/kg | 胆碱<br>Choline<br>mg/kg | 维生素 B <sub>6</sub><br>mg/kg | 维生素 B <sub>12</sub><br>$\mu$ g/kg | 亚油酸<br>Linoleic Acid<br>% |
|-------------|----------------|-------------------------------------------|--------------|--------------|--------------|-------------|------------------|------------------|------------------|------------------|------------------|------------------------------------|----------------|-----------------------------|-----------------------------|---------------------------------|-----------------------|------------------------|---------------------------|------------------------|-----------------------------|-----------------------------------|---------------------------|
| 46          | 4-10-0244      | 玉米胚芽粕 corn germ meal                      | 0.01         | —            | 0.160.69     | 214         | 7.7              | 23.3             | 126.6            | 0.33             | 2.0              | 80.8                               | 1.1            | 4.0                         | 4.4                         | 37.7                            | 0.22                  | 0.20                   | 2000                      | —                      | —                           | —                                 | 1.47                      |
| 47          | 5-11-0007      | DDGS corn distiller's grains with soluble | 0.880.170    | 0.350.98     | 197          | 43.9        | 29.5             | 83.5             | 0.37             | 3.5              | 40.0             | 3.5                                | 8.6            | 11.0                        | 75.0                        | 0.30                            | 0.88                  | 2637                   | 2.28                      | 10.0                   | 2.15                        | —                                 | —                         |
| 48          | 5-11-0009      | 蚕豆粉浆蛋白粉 broad bean gluten meal            | 0.01         | —            | —            | 0.06        | —                | 22.0             | 16.0             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 49          | 5-11-0004      | 麦芽根 barley malt sprouts                   | 0.060.590    | 0.162.18     | 198          | 5.3         | 67.8             | 42.4             | 0.60             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 50          | 5-13-0044      | 鱼粉 (CP64.5%) fish meal                    | 0.880.600    | 0.240.90     | 226          | 9.1         | 9.2              | 98.9             | 2.7              | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 51          | 5-13-0045      | 鱼粉 (CP62.5%) fish meal                    | 0.780.610    | 0.160.83     | 181          | 6.0         | 12.0             | 90.0             | 1.62             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 52          | 5-13-0046      | 鱼粉 (CP60.2%) fish meal                    | 0.970.610    | 0.161.10     | 80           | 8.0         | 10.0             | 80.0             | 1.5              | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 53          | 5-13-0077      | 鱼粉 (CP53.5%) fish meal                    | 1.150.610    | 0.160.94     | 292          | 8.0         | 9.7              | 88.0             | 1.94             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 54          | 5-13-0036      | 血粉 blood meal                             | 0.310.270    | 0.160.90     | 2100         | 8.0         | 2.3              | 14.0             | 0.7              | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 55          | 5-13-0037      | 羽毛粉 feather meal                          | 0.310.260    | 0.200.18     | 73           | 6.8         | 8.8              | 53.8             | 0.8              | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 56          | 5-13-0038      | 皮革粉 leather meal                          | —            | —            | —            | —           | 131              | 11.1             | 25.2             | 89.8             | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 57          | 5-13-0047      | 肉骨粉 meat and bone meal                    | 0.730.751    | 0.131.40     | 500          | 1.5         | 12.3             | 90.0             | 0.25             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 58          | 5-13-0048      | 肉粉 meat meal                              | 0.800.970    | 0.350.57     | 440          | 10.0        | 10.0             | 94.0             | 0.37             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 59          | 1-05-0074      | 苜蓿草粉 (CP19%) alfalfa meal                 | 0.090.380    | 0.302.08     | 372          | 9.1         | 30.7             | 17.1             | 0.46             | 94.6             | 144.0            | 5.8                                | 15.5           | 34.0                        | 40.0                        | 0.35                            | 4.36                  | 1419                   | 8.00                      | 0                      | 0.44                        | —                                 | —                         |
| 60          | 1-05-0075      | 苜蓿草粉 (CP17%) alfalfa meal                 | 0.170.460    | 0.362.40     | 361          | 9.7         | 30.7             | 21.0             | 0.46             | 94.6             | 125.0            | 3.4                                | 13.6           | 29.0                        | 38.0                        | 0.30                            | 4.20                  | 1401                   | 6.50                      | 0                      | 0.35                        | —                                 | —                         |
| 61          | 1-05-0076      | 苜蓿草粉 (CP14%~15%) alfalfa meal             | 0.110.460    | 0.362.22     | 437          | 9.1         | 33.2             | 22.6             | 0.48             | 63.0             | 98.0             | 3.0                                | 10.6           | 20.8                        | 41.8                        | 0.25                            | 1.54                  | 1548                   | —                         | —                      | —                           | —                                 | —                         |
| 62          | 5-11-0005      | 啤酒糟 brewers dried grain                   | 0.250.120    | 0.190.08     | 274          | 20.1        | 35.6             | 104.0            | 0.41             | 0.2              | 27.0             | 0.6                                | 1.5            | 8.6                         | 43.0                        | 0.24                            | 0.24                  | 1723                   | 0.70                      | 0                      | 2.94                        | —                                 | —                         |
| 63          | 7-15-0001      | 啤酒酵母 brewers dried                        | 0.100.120    | 0.231.70     | 248          | 61.0        | 22.3             | 86.7             | 1.00             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 64          | 4-13-0075      | 乳清粉 whey, dehydrated                      | 2.110.140    | 0.131.81     | 160          | 43.1        | 4.6              | 3.0              | 0.06             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 65          | 5-01-0162      | 酪蛋白 casein                                | 0.010.040    | 0.010.01     | 14           | 4.0         | 4.0              | 30.0             | 0.16             | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 66          | 5-14-0503      | 明胶 gelatin                                | —            | —            | 0.05         | —           | —                | —                | —                | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |
| 67          | 4-06-0076      | 牛奶乳糖 milk lactose                         | —            | —            | 0.152.40     | —           | —                | —                | —                | —                | —                | —                                  | —              | —                           | —                           | —                               | —                     | —                      | —                         | —                      | —                           | —                                 | —                         |

注：“—”表示未测值，下同



表 17 鸡用饲料氨基酸表现利用率

Table 17 Apparent Digestibility of Amino Acids in Feed Ingredients Used for Poultry

| 序号<br>(No.) | 中国饲料号<br>(CFN) | 饲料名称<br>Feed Name            | 干物质<br>DM, % | 粗蛋白<br>CP, % | 精氨酸<br>Arg, % | 组氨酸<br>His, % | 异亮氨酸<br>Ile, % | 亮氨酸<br>Leu, % | 赖氨酸<br>Lys, % | 蛋氨酸<br>Met, % | 胱氨酸<br>Cys, % | 苯丙氨酸<br>Phe, % | 酪氨酸<br>Tyr, % | 苏氨酸<br>Thr, % | 色氨酸<br>Trp, % | 缬氨酸<br>Val, % |
|-------------|----------------|------------------------------|--------------|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|
| 1           | 4-07-0279      | 玉米 corn grain                | 86.0         | 8.7          | 93            | 92            | 91             | 95            | 82            | 93            | 82            | 94             | 93            | 85            | 90            | 89            |
| 2           | 4-07-0272      | 高粱 sorghum grain 单宁<0.5      | 86.0         | 9.0          | 93            | 87            | 95             | 95            | 92            | 92            | 80            | 95             | 94            | 92            | 95            | 93            |
| 3           | 4-07-0270      | 小麦 wheat grain               | 87.0         | 13.9         | —             | —             | —              | —             | 76            | 87            | 78            | —              | —             | 74            | 84            | —             |
| 4           | 4-07-0274      | 大麦(裸)barley grain            | 87.0         | 13.0         | —             | —             | —              | —             | 70            | 71            | 75            | —              | —             | 67            | 75            | —             |
| 5           | 4-07-0277      | 大麦(皮)barley grain            | 87.0         | 11.0         | —             | —             | —              | —             | 71            | 76            | 78            | —              | —             | 70            | 80            | —             |
| 6           | 4-07-0281      | 黑麦 rye                       | 88.0         | 11.0         | 90            | 90            | 88             | 88            | 84            | 89            | 82            | 90             | 90            | 85            | —             | 90            |
| 7           | 4-07-0276      | 糙米 rough rice                | 87.0         | 8.8          | —             | —             | —              | —             | 83            | 86            | 82            | —              | —             | 81            | 86            | —             |
| 8           | 4-08-0104      | 次粉 wheat middling and reddog | 88.0         | 15.4         | —             | —             | —              | —             | 90            | 93            | 88            | —              | —             | 89            | 92            | —             |
| 9           | 4-08-0069      | 小麦麸 wheat bran               | 87.0         | 15.7         | —             | —             | —              | —             | 73            | 64            | 71            | —              | —             | 70            | 77            | —             |
| 10          | 4-08-0041      | 米糠 rice bran                 | 87.0         | 12.8         | —             | —             | —              | —             | 75            | 78            | 74            | —              | —             | 68            | 72            | —             |
| 11          | 5-10-0241      | 大豆饼 soybean meal(exp.)       | 87.0         | 40.9         | —             | —             | —              | —             | 77            | 72            | 60            | —              | —             | 74            | —             | —             |
| 12          | 5-10-0103      | 大豆粕 soybean meal(sol.)       | 89.0         | 47.9         | —             | —             | —              | —             | 90            | 93            | 88            | —              | —             | 89            | 92            | —             |
| 13          | 5-10-0102      | 大豆粕 soybean meal(sol.)       | 87.0         | 44.0         | —             | —             | —              | —             | 87            | 87            | 83            | —              | —             | 86            | —             | —             |
| 14          | 5-10-0118      | 棉籽饼 cottonseed meal(exp.)    | 88.0         | 36.3         | 90            | —             | 61             | 77            | 82            | 75            | 57            | 77             | 86            | 71            | —             | 74            |
| 15          | 5-10-0119      | 棉籽粕 cottonseed meal(sol.)    | 88.0         | 47.0         | —             | —             | —              | —             | 61            | 71            | 63            | —              | —             | 71            | 75            | —             |
| 16          | 5-10-0183      | 菜籽饼 rapeseed meal(exp.)      | 88.0         | 35.7         | 91            | 91            | 83             | 87            | 77            | 88            | 70            | 87             | 86            | 81            | —             | 72            |
| 17          | 5-10-0121      | 菜籽粕 rapeseed meal(sol.)      | 88.0         | 38.6         | 89            | 92            | 85             | 88            | 79            | 87            | 75            | 88             | 86            | 82            | 57            | 83            |
| 18          | 5-10-0115      | 花生仁粕 peanut meal(sol.)       | 88.0         | 47.8         | —             | —             | —              | —             | 78            | 84            | 75            | —              | —             | 83            | 85            | —             |
| 19          | 5-10-0242      | 向日葵仁粕 sunflower meal(sol.)   | 88.0         | 36.5         | 92            | 87            | 84             | 83            | 76            | 90            | 65            | 86             | 80            | 74            | —             | 79            |
| 20          | 5-10-0243      | 向日葵仁粕 sunflower meal(sol.)   | 88.0         | 33.6         | 92            | 87            | 84             | 83            | 76            | 90            | 65            | 86             | 80            | 74            | —             | 79            |
| 21          | 5-10-0246      | 芝麻饼 sesame meal(exp.)        | 92.0         | 39.2         | —             | —             | —              | —             | 25            | 80            | 65            | —              | —             | 54            | 65            | —             |
| 22          | 5-11-0003      | 玉米蛋白饲料 corn gluten feed      | 88.0         | 19.3         | —             | —             | —              | —             | 79            | 90            | 74            | —              | —             | 80            | 72            | —             |
| 23          | 5-13-0044      | 鱼粉(CP64.5%)fish meal         | 90.0         | 64.5         | 88            | 94            | 86             | 89            | 86            | 88            | 62            | 85             | 84            | 87            | 81            | 86            |
| 24          | 5-13-0037      | 羽毛粉 feather meal             | 88.0         | 77.9         | —             | —             | —              | —             | 63            | 71            | 55            | —              | —             | 69            | 72            | —             |
| 25          | 1-05-0074      | 苜蓿草粉(CP19%)alfalfa meal      | 87.0         | 19.1         | —             | —             | —              | —             | 59            | 65            | 58            | —              | —             | 65            | 72            | —             |

注：“—”表示未测值 “—” unmeasured

表 18 常用矿物质饲料中矿物元素的含量

Table 18 Trace Elements Contents in Mineral Feed Ingredients

| 序号<br>(No.) | 中国料号<br>(CFN) | 饲料名称<br>Feed Name                           | 化学分子式<br>Chemical Formula                                          | 钙<br>Ca, % <sup>a</sup> | 磷<br>P, % | 磷利用率<br>A <sub>vp</sub> , % <sup>b</sup> | 钠<br>Na, % | 氯<br>Cl, % | 钾<br>K, % | 镁<br>Mg, % | 硫<br>S, % | 铁<br>Fe, % | 锰<br>Mn, % |
|-------------|---------------|---------------------------------------------|--------------------------------------------------------------------|-------------------------|-----------|------------------------------------------|------------|------------|-----------|------------|-----------|------------|------------|
| 01          | 6-14-0001     | 碳酸钙, 饲料级轻质 Calcium carbonate                | CaCO <sub>3</sub>                                                  | 38.42                   | 0.02      | —                                        | 0.08       | 0.02       | 0.08      | 1.610      | 0.08      | 0.06       | 0.02       |
| 02          | 6-14-0002     | 磷酸氢钙, 无水 Calcium acid phosphate             | CaHPO <sub>4</sub>                                                 | 29.60                   | 22.77     | 95~100                                   | 0.18       | 0.47       | 0.15      | 0.800      | 0.80      | 0.79       | 0.14       |
| 03          | 6-14-0003     | 磷酸氢钙, 2 个结晶水 Calcium acid phosphate         | CaHPO <sub>4</sub> ·2H <sub>2</sub> O                              | 23.29                   | 18.00     | 95~100                                   | —          | —          | —         | —          | —         | —          | —          |
| 04          | 6-14-0004     | 磷酸二氢钙 Calcium dihydrogen phosphate          | Ca(H <sub>2</sub> PO <sub>4</sub> ) <sub>2</sub> ·H <sub>2</sub> O | 15.90                   | 24.58     | 100                                      | 0.20       | —          | 0.16      | 0.900      | 0.80      | 0.75       | 0.01       |
| 05          | 6-14-0005     | 磷酸三钙 (磷酸钙) Calcium carbonate                | Ca <sub>3</sub> (PO <sub>4</sub> ) <sub>2</sub>                    | 38.76                   | 20.0      | —                                        | —          | —          | —         | —          | —         | —          | —          |
| 06          | 6-14-0006     | 石粉 <sup>c</sup> 石灰石、方解石等 Limestone, Calcite |                                                                    | 35.84                   | 0.01      | —                                        | 0.06       | 0.02       | 0.11      | 2.060      | 0.04      | 0.35       | 0.02       |
| 07          | 6-14-0007     | 骨粉, 脱脂 Bone meal                            |                                                                    | 29.80                   | 12.50     | 80~90                                    | 0.04       | —          | 0.20      | 0.300      | 2.40      | —          | 0.03       |
| 08          | 6-14-0008     | 贝壳粉 Shell meal                              |                                                                    | 32~35                   | —         | —                                        | —          | —          | —         | —          | —         | —          | —          |
| 09          | 6-14-0009     | 蛋壳粉 Egg shell meal                          |                                                                    | 30~40                   | 0.1~0.4   | —                                        | —          | —          | —         | —          | —         | —          | —          |
| 10          | 6-14-0010     | 磷酸氢铵 Ammonium hydrogen phosphate            | (NH <sub>4</sub> ) <sub>2</sub> HPO <sub>4</sub>                   | 0.35                    | 23.48     | 100                                      | 0.20       | —          | 0.16      | 0.750      | 1.50      | 0.41       | 0.01       |
| 11          | 6-14-0011     | 磷酸二氢铵 Ammonium dihydrogen phosphate         | (NH <sub>4</sub> ) <sub>2</sub> H <sub>2</sub> PO <sub>4</sub>     | —                       | 26.93     | 100                                      | —          | —          | —         | —          | —         | —          | —          |
| 12          | 6-14-0012     | 磷酸氢二钠 Sodium hydrogen phosphate             | Na <sub>2</sub> HPO <sub>4</sub>                                   | 0.09                    | 21.82     | 100                                      | 31.04      | —          | —         | —          | —         | —          | —          |
| 13          | 6-14-0013     | 磷酸二氢钠 Sodium dihydrogen phosphate           | NaH <sub>2</sub> PO <sub>4</sub>                                   | —                       | 25.81     | 100                                      | 19.17      | 0.02       | 0.01      | 0.010      | —         | —          | —          |
| 14          | 6-14-0014     | 碳酸钠 Sodium carbonate (soda)                 | Na <sub>2</sub> CO <sub>3</sub>                                    | —                       | —         | —                                        | 43.30      | —          | —         | —          | —         | —          | —          |
| 15          | 6-14-0015     | 碳酸氢钠 Sodium bicarbonate (baking soda)       | NaHCO <sub>3</sub>                                                 | 0.01                    | —         | —                                        | 27.00      | —          | 0.01      | —          | —         | —          | —          |
| 16          | 6-14-0016     | 氯化钠 Sodium chloride                         | NaCl                                                               | 0.30                    | —         | —                                        | 39.50      | 59.00      | —         | 0.005      | 0.20      | 0.01       | —          |
| 17          | 6-14-0017     | 氯化镁 Magnesium chloride                      | MgCl <sub>2</sub> ·6H <sub>2</sub> O                               | —                       | —         | —                                        | —          | —          | —         | 11.950     | —         | —          | —          |
| 18          | 6-14-0018     | 碳酸镁 Magnesium carbonate                     | MgCO <sub>3</sub> ·Mg(OH) <sub>2</sub>                             | 0.02                    | —         | —                                        | —          | —          | —         | 34.000     | —         | —          | 0.01       |
| 19          | 6-14-0019     | 氧化镁 Magnesium oxide                         | MgO                                                                | 1.69                    | —         | —                                        | —          | —          | 0.02      | 55.000     | 0.10      | 1.06       | —          |
| 20          | 6-14-0020     | 硫酸镁, 7 个结晶水 Magnesium sulfate               | MgSO <sub>4</sub> ·7H <sub>2</sub> O                               | 0.02                    | —         | —                                        | —          | 0.01       | —         | 9.860      | 13.01     | —          | —          |
| 21          | 6-14-0021     | 氯化钾 Potassium chloride                      | KCl                                                                | 0.05                    | —         | —                                        | 1.00       | 47.56      | 52.44     | 0.230      | 0.32      | 0.06       | 0.001      |
| 22          | 6-14-0022     | 硫酸钾 Potassium sulfate                       | K <sub>2</sub> SO <sub>4</sub>                                     | 0.15                    | —         | —                                        | 0.09       | 1.50       | 44.87     | 0.600      | 18.40     | 0.07       | 0.001      |

注 1: 数据来源:《中国饲料学》(2000, 张子仪主编),《猪营养需要》(NRC, 1998)。

注 2: 饲料中使用的矿物质添加剂一般不是化学纯化合物, 其组成成分的变异较大。如果能得到, 一般应采用原料供给商的分析结果。例如, 饲料级的磷酸氢钙原料中往往含有一些磷酸二氢钙, 而磷酸二氢钙中含有一些磷酸氢钙。

<sup>a</sup> 在大多数来源的磷酸氢钙、磷酸二氢钙、磷酸三钙、脱氧磷酸钙、碳酸钙、硫酸钙和方解石石粉中, 估计钙的生物学利用率为 90%~100%, 在高镁含量的石粉或白云石粉中钙的生物学效率估计值通常以相当于磷酸氢钙或磷酸二氢钙中的磷的生物学效率表示。<sup>b</sup> 生物学效率估计值通常以相当于磷酸氢钙或磷酸二氢钙中的磷的生物学效率表示。<sup>c</sup> 大多数方解石石粉中含有 38% 或高于表中所示的钙和低于表中所示的镁, “—”表示数据不详。

Note 1: data from (Chinese Feed Sciences) (2002, Zhang Ziyi, chief editor), (Nutrient Requirements of Swine) (NRC, 1998).

Note 2: The mineral supplements used as feed supplements are not chemically pure compounds, and the composition may vary substantially among sources. The supplier's analysis should be used if it is available. For example, feed-grade dicalcium phosphate contains some monocalcium phosphate and feed-grade monocalcium phosphate contains dicalcium phosphate.

<sup>a</sup> Estimates suggest 90% to 100% bioavailability of calcium in most sources of monocalcium phosphate, dicalcium phosphate, tricalcium phosphate, defluorinated phosphate, calcium carbonate, calcium sulfate, and calcitic limestone. The calcium in high-magnesium limestone or dolomitic limestone is less bioavailable (50% to 80%).<sup>b</sup> bioavailability estimates are generally expressed as a percentage of monocalcium phosphate or monocalcium phosphate.<sup>c</sup> Most calcitic limestones will contain 38% or more calcium and less magnesium than shown in the table.

表 19 常用维生素类饲料添加剂产品有效成分含量

Table 19 The contents of effective ingredient in normal vitamin additives

| 有效成分                                                          | 产品名称                                                             | 有效成分含量                                  |
|---------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------|
| 维生素 A Vitamin A                                               | 维生素 A 醋酸酯 Vitamin A acetate                                      | 30 万 IU/g, 40 万 IU/g 或 50 万 IU/g        |
|                                                               | 维生素 A D <sub>3</sub> 粉 Vitamin AD <sub>3</sub> (powder)          | 50 万 IU/g                               |
|                                                               | 维生素 A 醋酸酯原料(油) Vitamin Acetate technical grade(oil)              | 210 万 IU/g                              |
| 维生素 D <sub>3</sub> Vitamin D <sub>3</sub>                     | 维生素 D <sub>3</sub> Vitamin D <sub>3</sub>                        | 30 万 IU/g, 40 万 IU/g 或 50 万 IU/g        |
|                                                               | 维生素 AD <sub>3</sub> 粉 Vitamin AD <sub>3</sub> (powder)           | 10 万 IU/g                               |
|                                                               | 维生素 D <sub>3</sub> 原料(锭剂) Vitamin D <sub>3</sub> technical grade | 2 000 万 IU/g                            |
| dl- $\alpha$ -生育酚<br>dl- $\alpha$ -tocopherol                 | 维生素 E 醋酸酯粉剂 Vitamin E acetate(powder)                            | 50 %                                    |
|                                                               | 维生素 E 醋酸酯油剂 Vitamin E acetate Oily                               | 97 %                                    |
| 维生素 K <sub>3</sub> Vitamin K <sub>3</sub><br>(甲萘醌)(menadione) | 亚硫酸氢钠甲萘醌(MSB)微囊                                                  | 含甲萘醌 25 %                               |
|                                                               | 亚硫酸氢钠甲萘醌(MSB)Menadione sodium bisulfide(MSB)                     | 含亚硫酸氢钠甲萘醌 94 %, 约含甲萘醌 50 %              |
|                                                               | 亚硫酸烟酰胺甲萘醌(MNB)                                                   | 含甲萘醌不低于 43.7 %                          |
|                                                               | 亚硫酸氢钠甲萘醌复合物(MSBC)Menadione sodium bisulfide complex(MSBC)        | 约含甲萘醌 33 %                              |
|                                                               | 亚硫酸二甲噻啉甲萘醌(MPB)Menadione pyrimidinal bisulfite                   | 含亚硫酸二甲噻啉甲萘醌 50 %, 约含甲萘醌 22.5 %          |
| 硫胺素 thiamine                                                  | 硝酸硫胺 Thiamine mononitrate                                        | 含硝酸硫胺 98.0 %, 约含硫胺素 80.0 %              |
| 核黄素 riboflavin                                                | 盐酸硫胺 Thiamine hydrochloride                                      | 含盐酸硫胺 98.5 %, 约含硫胺素 88.0 %              |
|                                                               | 维生素 B <sub>2</sub> Vitamin B <sub>2</sub>                        | 80 % 或 96 %                             |
| d-泛酸 d-pantothenic acid                                       | D-泛酸钙 Calcium d pantothenate                                     | 含 D-泛酸钙 98.0 %, 约含 d-泛酸 90.0 %          |
|                                                               | DL-泛酸钙 Calcium dl pantothenate                                   | 相当于 D-泛酸钙生物活性的 50 %                     |
| 烟酸 Niacin                                                     | 烟酸 Niacin                                                        | 99.0 %                                  |
|                                                               | 烟酰胺 Niacinamide                                                  | 98.5 %                                  |
| 维生素 B <sub>6</sub> Vitamin B <sub>6</sub>                     | 盐酸吡哆醇 Pyridoxine hydrochloride                                   | 含盐酸吡哆醇 98 %, 约含吡哆醇 80 %                 |
| d-生物素 biotin                                                  | 生物素 biotin                                                       | 2 % 或 98 %                              |
| 叶酸 Folic acid                                                 | 叶酸 Folic acid                                                    | 80 % 或 95 %                             |
| 维生素 B <sub>12</sub> Vitamin B <sub>12</sub>                   | 维生素 B <sub>12</sub> Vitamin B <sub>12</sub>                      | 1 %, 5 % 或 10 %                         |
| 胆碱 choline                                                    | 氯化胆碱粉剂 Choline chloride(powder)                                  | 含氯化胆碱 50 % 或 60 %, 约含胆碱 37.3 % 或 44.8 % |
|                                                               | 氯化胆碱液剂 Choline chloride(liquid)                                  | 含氯化胆碱 70 % 或 75 %, 约含胆碱 52.2 % 或 56.0 % |

表 20 鸡日粮中矿物质元素的耐受量

Table 20 Dietary tolerant concentrations of mineral elements for chicken

| 元素 Element   | 阶段 Period                 | 单位 Unit     | 耐受量 Tolerance |
|--------------|---------------------------|-------------|---------------|
| 钙 Calcium    | 产蛋期 Egg production period | %           | 4.0           |
|              | 其他 others                 | %           | 1.2           |
| 磷 Phosphorus | 产蛋期 Egg production period | %           | 0.8           |
|              | 其他 others                 | %           | 1.0           |
| 钠 Sodium     | 产蛋期 Egg production period | %           | 0.8           |
|              | 其他 others                 | %           | 1.0           |
| 铜 Copper     |                           | 毫克/千克 mg/kg | 300           |
| 铁 Iron       |                           | 毫克/千克 mg/kg | 500           |
| 锰 Manganese  |                           | 毫克/千克 mg/kg | 2 000         |
| 锌 Zinc       |                           | 毫克/千克 mg/kg | 1 000         |
| 碘 Iodine     |                           | 毫克/千克 mg/kg | 300           |
| 硒 Selenium   |                           | 毫克/千克 mg/kg | 2             |
| 氟 Fluorin    |                           | 毫克/千克 mg/kg | 150~400       |