Introduction

This booklet contains the nutritional recommendations for the European Ross® 308 parent stock and is to be used with the Ross Parent Stock Management Handbook and the European Ross 308 Parent Stock Performance Objectives.

Performance

To achieve optimal reproductive performance, it is important that the body-weight profiles recommended in the European Ross 308 Parent Stock Performance Objectives are followed. For the nutritional recommendations that follow, nutrient specifications presented have been based upon daily energy allocations that enable body-weight profiles and reproductive performance objectives to be achieved.

Recommendations included in this booklet suggest different rearing programs for the following scenarios:

- **4-Stage Rearing Program** - where a smooth energy transition is applied between rearing and laying phases.
- **5-Stage Rearing Program** - where a developer ration is introduced to smooth the transition to a pre-breeder.
- **Separate Male Feed** – only for males in production.

Nutrient values must be adjusted to reflect the feeding of different energy levels. Feed allocation should be determined by body weight, evaluation of fleshing and egg production, and therefore altered to maintain the recommended weight and egg production profiles.

It may be beneficial to use a specific diet for males during the production period. A specification for a male diet is provided in this booklet.

The energy values used in these specifications are based on assays for Metabolizable Energy (ME) published by the World’s Poultry Science Association (WPSA). The values for amino acid digestibility are based on Standardized Ileal Digestibility (SID) assays.

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### Female Parent Stock Nutrient Specifications

#### 4-Stage Rearing Program

<table>
<thead>
<tr>
<th>Age Fed</th>
<th>Starter 1</th>
<th>Starter 2</th>
<th>Grower</th>
<th>Pre-Breeder</th>
<th>Breeder 1</th>
<th>Breeder 2</th>
<th>Breeder 3</th>
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<tbody>
<tr>
<td>Energy per kg*</td>
<td>kcal</td>
<td>kcal</td>
<td>kcal</td>
<td>kcal</td>
<td>kcal</td>
<td>kcal</td>
<td>kcal</td>
</tr>
<tr>
<td></td>
<td>0-21 days</td>
<td>22-42 days</td>
<td>43-105 days</td>
<td>106 days to 5% production</td>
<td>&gt;5% production to 224 days</td>
<td>225-350 days</td>
<td>After 351 days</td>
</tr>
<tr>
<td></td>
<td>2800</td>
<td>2800</td>
<td>2600</td>
<td>2700</td>
<td>2800</td>
<td>2800</td>
<td>2800</td>
</tr>
<tr>
<td></td>
<td>11.7</td>
<td>11.7</td>
<td>10.9</td>
<td>11.3</td>
<td>11.7</td>
<td>11.7</td>
<td>11.7</td>
</tr>
</tbody>
</table>

**DIGESTIBLE AMINO ACIDS**

- Lysine (max)**: % 1.00, 0.72, 0.48, 0.47, 0.62, 0.56, 0.52
- Methionine: % 0.46, 0.37, 0.33, 0.33, 0.38, 0.35, 0.34
- Methionine & Cystine: % 0.84, 0.68, 0.58, 0.57, 0.62, 0.57, 0.55
- Threonine: % 0.70, 0.60, 0.48, 0.48, 0.55, 0.53, 0.51
- Valine: % 0.81, 0.72, 0.56, 0.55, 0.64, 0.60, 0.56
- Tryptophane: % 0.18, 0.18, 0.14, 0.14, 0.15, 0.14, 0.13
- Arginine: % 1.15, 0.92, 0.72, 0.72, 0.85, 0.82, 0.79
- Leucine: % 1.20, 1.03, 0.76, 0.76, 0.95, 0.90, 0.86
- Isoleucine: % 0.70, 0.58, 0.44, 0.42, 0.52, 0.50, 0.49
- Histidine: % 0.43, 0.32, 0.24, 0.21, 0.30, 0.28, 0.26

- Crude Protein (min): % 19.0, 17.0, 14.0, 14.0, 15.0, 14.0, 13.0

**MINERALS**

- Calcium: % 1.05, 0.94, 0.90, 1.20, 3.00, 3.20, 3.40
- Available Phosphorus: % 0.50, 0.47, 0.45, 0.45, 0.36, 0.34, 0.32
- Sodium: % 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23
- Chloride: % 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23, 0.18-0.23
- Potassium: % 0.60-0.90, 0.60-0.90, 0.60-0.90, 0.60-0.90, 0.70-0.90, 0.65-0.90, 0.60-0.90

**ADDED TRACE MINERALS PER KG**

- Copper: mg 16
- Iodine: mg 2
- Iron: mg 40
- Manganese: mg 130
- Selenium: mg 0.3
- Zinc***: mg 90

**ADDED VITAMINS PER KG**

- Vitamin A***: IU 10000
- Vitamin D3***: IU 3200
- Vitamin E: IU 100
- Vitamin K (Menadione): mg 6
- Thiamin (B1): mg 5
- Riboflavin (B2): mg 15
- Niacin: mg 50
- Pantothenic Acid: mg 20
- Pyridoxine (B6): mg 5
- Biotin: mg 0.3
- Folic Acid: mg 3
- Vitamin B12: mg 0.05

**MINIMUM SPECIFICATION**

- Choline per kg: mg 1400
- Linoleic Acid: % 1.25

* Nutrients should be factored accordingly when feeding different energy values.
** In order to achieve the amino acid requirements without exceeding the recommended levels of digestible lysine it may be necessary to adopt more complex diets.
*** Established limits according to EU legislation.

**NOTES:** These feed specifications should be used as a guide. They may require adjustment for local environmental conditions, ingredient availability, and markets.
## Female Parent Stock Nutrient Specifications

### 5-Stage Rearing Program

<table>
<thead>
<tr>
<th>Age Fed</th>
<th>Starter 1 (0-21 days)</th>
<th>Starter 2 (22-42 days)</th>
<th>Grower (43-105 days)</th>
<th>Developer (106-140 days)</th>
<th>Pre-Breeder (141 days to 5% production)</th>
<th>Breeder 1 (5% production to 224 days)</th>
<th>Breeder 2 (225-350 days)</th>
<th>Breeder 3 (After 351 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy per kg*</td>
<td>kcal</td>
<td>2800</td>
<td>2800</td>
<td>2600</td>
<td>2700</td>
<td>2800</td>
<td>2800</td>
<td>2800</td>
</tr>
<tr>
<td></td>
<td>MJ</td>
<td>11.7</td>
<td>11.7</td>
<td>10.9</td>
<td>11.3</td>
<td>11.7</td>
<td>11.7</td>
<td>11.7</td>
</tr>
</tbody>
</table>

### DIGESTIBLE AMINO ACIDS

- **Lysine (max)**
  - % 1.00 0.72 0.48 0.48 0.48 0.48 0.48 0.48 0.48
- **Methionine**
  - % 0.46 0.37 0.33 0.33 0.34 0.38 0.35 0.34 0.34
- **Methionine & Cystine**
  - % 0.84 0.68 0.58 0.58 0.58 0.62 0.55 0.53 0.51
- **Threonine**
  - % 0.70 0.60 0.48 0.48 0.48 0.49 0.55 0.53 0.51
- **Valine**
  - % 0.81 0.72 0.56 0.56 0.56 0.64 0.60 0.56 0.56
- **Tryptophan**
  - % 0.18 0.18 0.14 0.14 0.15 0.15 0.14 0.13 0.13
- **Arginine**
  - % 1.15 0.92 0.72 0.73 0.74 0.85 0.82 0.79 0.79
- **Leucine**
  - % 1.20 1.03 0.76 0.77 0.78 0.95 0.90 0.86 0.86
- **Isoleucine**
  - % 0.70 0.58 0.44 0.43 0.43 0.52 0.50 0.49 0.49
- **Histidine**
  - % 0.43 0.32 0.24 0.22 0.20 0.30 0.28 0.26 0.26

**Crude Protein (min)** % 19.0 17.0 14.0 14.0 14.0 15.0 14.0 13.0

### MINERALS

- **Calcium**
  - % 1.05 0.94 0.90 0.90 1.50 3.00 3.20 3.40 3.40
- **Available Phosphorus**
  - % 0.50 0.47 0.45 0.45 0.35 0.36 0.34 0.32 0.32
- **Sodium**
  - % 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23
- **Chloride**
  - % 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23 0.18-0.23
- **Potassium**
  - % 0.60-0.90 0.60-0.90 0.60-0.90 0.60-0.90 0.60-0.90 0.70-0.90 0.65-0.90 0.60-0.90 0.60-0.90

### ADDED TRACE MINERALS PER KG

- **Copper**
  - mg 16 16
- **Iodine**
  - mg 2 3
- **Iron**
  - mg 40 50
- **Manganese**
  - mg 130 130
- **Selenium**
  - mg 0.3 0.3
- **Zinc***
  - mg 90 90

### ADDED VITAMINS PER KG

- **Vitamin A***
  - IU 10000 10000
- **Vitamin D3***
  - IU 3200 3200
- **Vitamin E**
  - IU 100 100
- **Vitamin K (Menadione)**
  - mg 6 6
- **Thiamin (B1)**
  - mg 5 6
- **Riboflavin (B2)**
  - mg 15 20
- **Niacin**
  - mg 50 70
- **Pantothenic Acid**
  - mg 20 25
- **Pyridoxine (B6)**
  - mg 5 8
- **Biotin**
  - mg 0.3 0.6
- **Folic Acid**
  - mg 3 5
- **Vitamin B12**
  - mg 0.05 0.07

### MINIMUM SPECIFICATION

- **Choline per kg**
  - mg 1400 1600
- **Linoleic Acid**
  - % 1.25 2.00

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* Nutrients should be factored accordingly when feeding different energy values.
** In order to achieve the amino acid requirements without exceeding the recommended levels of digestible lysine it may be necessary to adopt more complex diets.
*** Established limits according to EU legislation.

**NOTES:** These feed specifications should be used as a guide. They may require adjustment for local environmental conditions, ingredient availability, and markets.
Parent Stock Nutrient Specifications

Nutrient Allocations at Peak Production

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Nutrient Allocation at Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kcal/bird/day)</td>
<td>468</td>
</tr>
<tr>
<td>Digestible Amino Acids (mg/bird/day)</td>
<td></td>
</tr>
<tr>
<td>Lysine</td>
<td>1036</td>
</tr>
<tr>
<td>Methionine</td>
<td>635</td>
</tr>
<tr>
<td>Methionine &amp; Cystine</td>
<td>1036</td>
</tr>
<tr>
<td>Threonine</td>
<td>919</td>
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<tr>
<td>Valine</td>
<td>1070</td>
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<tr>
<td>Tryptophan</td>
<td>251</td>
</tr>
<tr>
<td>Arginine</td>
<td>1421</td>
</tr>
<tr>
<td>Leucine</td>
<td>1588</td>
</tr>
<tr>
<td>Isoleucine</td>
<td>869</td>
</tr>
<tr>
<td>Histidine</td>
<td>501</td>
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</tbody>
</table>

Minerals (mg/bird/day)

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Nutrient Allocation at Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium</td>
<td>5014</td>
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<tr>
<td>Available Phosphorus</td>
<td>602</td>
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</tbody>
</table>
European Male Parent Stock Nutrient Specifications
Separate Diet in Production

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>%</th>
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<tbody>
<tr>
<td>Lysine**</td>
<td>0.34</td>
</tr>
<tr>
<td>Methionine</td>
<td>0.32</td>
</tr>
<tr>
<td>Methionine &amp; Cystine</td>
<td>0.56</td>
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<tr>
<td>Threonine</td>
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<tr>
<td>Valine</td>
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<td>Tryptophan</td>
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</tr>
<tr>
<td>Arginine</td>
<td>0.66</td>
</tr>
<tr>
<td>Leucine</td>
<td>0.64</td>
</tr>
<tr>
<td>Isoleucine</td>
<td>0.40</td>
</tr>
<tr>
<td>Histidine</td>
<td>0.15</td>
</tr>
<tr>
<td>Crude Protein</td>
<td>12.0</td>
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</table>

**DIGESTIBLE AMINO ACIDS**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium</td>
<td>0.70</td>
</tr>
<tr>
<td>Available Phosphorus</td>
<td>0.35</td>
</tr>
<tr>
<td>Sodium</td>
<td>0.18-0.20</td>
</tr>
<tr>
<td>Chloride</td>
<td>0.20-0.23</td>
</tr>
<tr>
<td>Potassium</td>
<td>0.60-0.75</td>
</tr>
</tbody>
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**MINERALS**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>16</td>
</tr>
<tr>
<td>Iodine</td>
<td>2</td>
</tr>
<tr>
<td>Iron</td>
<td>40</td>
</tr>
<tr>
<td>Manganese</td>
<td>120</td>
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<tr>
<td>Selenium</td>
<td>0.3</td>
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<td>Zinc***</td>
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**MINIMUM SPECIFICATION**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>mg</th>
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<tbody>
<tr>
<td>Choline</td>
<td>1400</td>
</tr>
<tr>
<td>Linoleic Acid</td>
<td>1.25</td>
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* Energy base value. Nutrients should be factored accordingly when feeding different energy values.

** In order to achieve the amino acid requirements without exceeding the recommended levels of digestible lysine it may be necessary to adopt more complex diets.

*** Established limits according to EU legislation.

**NOTES:** These feed specifications should be used as a guide. They may require adjustment for local conditions, legislation and markets.