
M99 MALE MANAGEMENT: HOW TO OPTIMIZE FERTILITY AND LIVEABILITY WITH F15 AND JV FEMALE BREEDERS

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Rearing period (0-21/22 weeks)

Objectives:

To obtain sexually developed males with good legs that are properly synchronized with the level of female sexual maturity.

- The males should be grown separately from the females:

- Either in their own house, which allows when needed to apply a light and feed programme different to that of the females
- Or in the same house; some social interaction between males and females is then possible during the course of rearing, which helps to reduce the risk of aggressiveness later at the time of mixing. In this type of system, male management is made easier since pen size is smaller and competition between individuals is therefore reduced. A separate feed circuit for the males is necessary.

Rearing comprises 3 main periods:

1- 1 day → 10 weeks

Male growth must be managed from the start. During this first period, growth is important, as this is the period for optimal skeleton and immune system and for good leg development. Also during this phase the Sertoli cells that will later provide nutrition to the spermatozoa are multiplying.

→ Bodyweight target at 3 weeks = 475 g

Feeding a starter feed in crumble form for the first 2 to 3 weeks stimulates feed intake and helps to encourage early growth. Following this by a relatively fine mash feed is preferred, in order to decrease feed competition by increasing consumption time to maintain good flock uniformity. Compliance with the recommended density and equipment standards is essential to obtain optimum uniformity. Non-feeding day feed programmes (5 days/7 or even 4 days/7) should start as soon as feed consumption time becomes less than 50 minutes. This generally occurs at about 4 weeks of age and should be maintained, if possible, until the start of production. The light programme used is often the same as for the females. The constant day length period should be achieved by 10 days, with light intensity in the range of 10 lux. Light intensity should be monitored in accordance with flock behaviour. Avoid too big a change between the light intensity used during rearing and what will be later perceived during production. To reduce aggressivity at the start of production when transferred from dark to open-side houses, sufficient light intensity should be used during rearing.

Equipment standards

	Rearing House	Production House
Density:	4 males /m ²	
≠ of Males for 100 females:		8 to 9 at 24 weeks of age
Brooders (brooding period):	1 for 500 males	
Linear Feeders:	20 cm access per male	20 cm access per male
Pans or Hanging feeders (Ø35cm):	1 for 8 males	1 for 8 males
Bell Drinkers:	1 for 80 males	1 for 70 birds
Nipples (flow 120 ml/min):	1 for 10 males	1 for 8 birds
Feed Distribution Time:	4 minutes	4 minutes
Ventilation rate:	5m ³ / kg bodyweight / hour	5 to 8 m ³ / kg bodyweight / hour

By 4-5 weeks of age 100% male grading is recommended. When placed in a separate pen, the smaller males can **progressively** catch up with bodyweight before the age of 10 weeks, when skeleton growth has practically come to an end.

→ **Bodyweight target at 10 weeks = 1450 g**

Careful beak trimming at about 7 days of age is recommended.

Grit (2 g / bird) and grain or a small amount of feed (2 g / bird) distributed in the litter on non-feeding days helps behavioural control, digestive tract development and litter maintenance.

2- 10 weeks → 15weeks

Uniform growth is essential: + 120 g / week

→ **Bodyweight target at 15 weeks = 2050 g**

3- 15 weeks → 21- 23 weeks (age at mixing with the females)

Testicle size development is significant during this period (maximum size being reached between 23 and 30 weeks depending on the individuals). For optimum future fertility weekly growth should be uniform and regular (growth target = +135 / 140 g / week)

→ **Bodyweight target at 20 weeks = 2750 g**

→ **Bodyweight target at 22 weeks = 3020 g**

Check male beaks before mixing with the females. Sharp beaks should be re-trimmed.

Production (21-25 weeks)

This phase is essential to future sexual behaviour throughout production. During the days following mixing, a good part of the male / female relationship is established

→ **Important impact on future fertility**

Good male bodyweight and the number of males at the time of mixing are both important to control their aggressivity towards the females for optimum fertility.

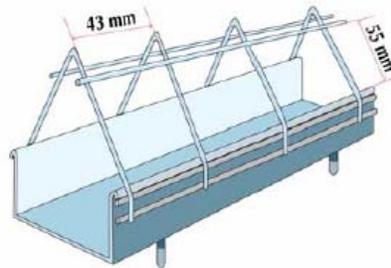
1 – Age at mixing: As late as possible (21 to 23 weeks), but no later than 10-12 days prior to 5% daily production. Maximum 9% males at first introduction and at 25-26 weeks, keep only 8 to 8.5% males. When male weight and uniformity is under control 8% males throughout production is usually sufficient.

The M99 male tends to mature before the females. Progressive mixing is therefore ideal to obtain positive male and female interaction. E.g. 5 to 6% **mature** males at 22/23 weeks and the rest of the males are introduced progressively between 5 and 30% production.

Observe the flock carefully during the weeks following mixing. If the males are too aggressive, remove some and reintroduce them slowly as the females' become more mature.

2 – Growth must be strictly controlled during this period, as it is very likely that some males can steal female feed until 25-27 weeks, before their comb has sufficient size to stop them getting their head through the restriction device. The risk of excessive male weight gain is high during this phase. Whatever the feeding equipment used for the females (pan or chain), the system to prevent males from eating together with the females must be efficient.

Grill size is important. When using chain feeders, it is possible to place a PVC tube under the upper angle of the grill to further reduce male head access. This tube can be removed by 30 weeks.



The male comb should not be cut (full comb)

Observe the males to see if some are eating with the females and adjust the feed amount accordingly. It is possible to transfer a part of the male feed to the female feeders until they can no longer eat with the females at about 25-27 weeks.

Example (with appropriate grills):

Supposing male feed before mixing = 120 g (at 22 weeks) to ensure proper growth:

-> 23rd week: 70 g in male feeders and 50 g added to the female feed

-> 24th week: 90 g " " and 30 g " "

-> 25th week: 120 g in male feeders

-> **During the subsequent weeks male feed is progressively increased according to their weight gain, uniformity and the type of feed used (special male feed?).**

Male bodyweight is taken on a regular basis to avoid becoming over weight and to allow adjustment of the feed allocation. Weigh 50 to 60 males every week throughout the production period from different parts of the pen.

Production (> 25 weeks)

With proper management 8% males are sufficient during the production period.

Male bodyweight gain should be as regular as possible. Follow the upper line of the standard (bodyweight without feed).

In very good conditions, it is possible to follow the minimum bodyweight standard.

Uniformity is a key parameter that should be monitored over the whole production period.

In the case of poor uniformity, the average bodyweight is not a clear indicator of the amount of truly active males, which is probably much lower. Their performance can deteriorate:

→ Increased risk of females damaged by the males.

Observe male condition and behaviour. When some males start losing condition, act quickly by increasing their feed amount significantly over a 2 day period and then return to the initial feed amount + 5 g

E.g. if 130 g / male when some start to lose condition, give 170 g for 2 days then feed to 135 g

Most importantly the reasons for bad uniformity should be investigated:

- **Insufficient feeding space?**
- **Improper bird distribution during feeding?**
- **Unstable feeders?**
- **Inappropriate – too low or too high – feeder height?**
- **Insufficient feed amount?**

In order to properly assess the situation, male feeding should take place when an observer can be present:

→ When males can still eat from the female feeders, feed distribution must be made at the same time as the females.

→ Later male feeding time can be delayed to facilitate observation of eating behaviour.

Male feed quantity is frequently reviewed taking into consideration condition and mortality. Males that lose condition may recover when placed in a separate pen.

When feeding is manual, it is better to use linear trough type feeders (20 cm access / bird) compared to round type feeders that are unstable.

Special male feed, with higher fibre content (6 - 8%) is recommended, allowing for a longer consumption and digestion time favours a calmer behaviour.

Supplementation of Vitamins E, C (antioxidants) and trace elements (selenium) may improve sperm quality.

Distribution of grain and grit on the litter at the end of the afternoon encourages mating activity.

“Spiking” of males is frequently used as a means to improve hatchability during the second half of production. One part of the males (10 to 30%) is replaced by younger males (25-27 weeks), with sufficient bodyweight of at least 3500 g to allow them to be dominant over the females. The time of spiking is variable. It should take into account male condition and should take place *before* hatchability has significantly started to decrease. Practically, spiking takes place between 38 and 45 weeks of age. The risk of aggressiveness towards females is increased following the introduction of new males. Therefore, the need for spiking males should be properly evaluated, in order to remate the flock as required. The health status of these males should be carefully checked before their introduction.

The role of females in management of both male behaviour and hatchability:

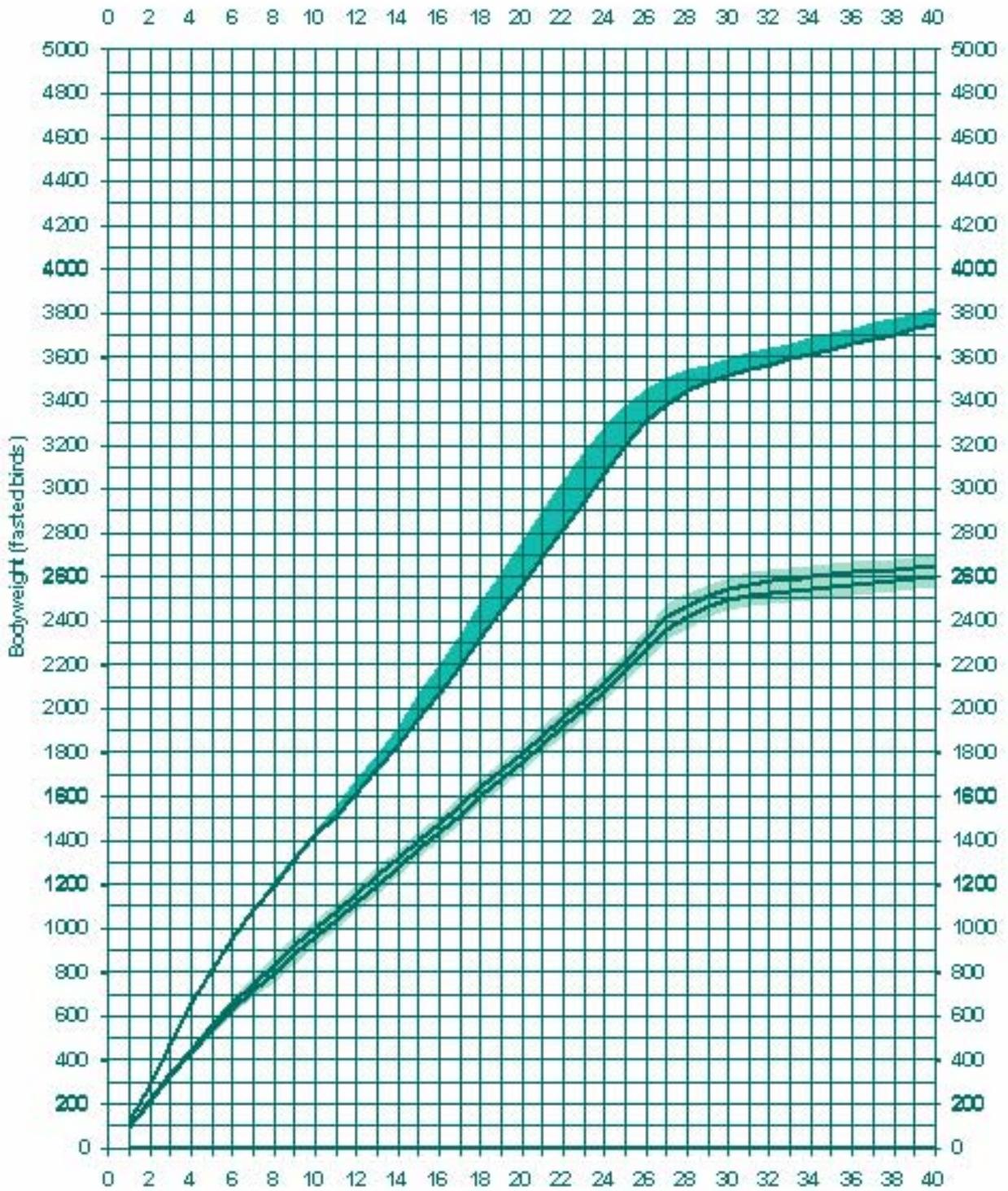
Female behaviour plays an important part in mating frequency. Therefore, controlling their bodyweight is one important factor for good hatchability: It is very important to maintain **good female uniformity** and to **avoid excess bodyweight**. By doing this damage to the females by the males can be reduced.

Female **feed distribution** should be carefully observed. Poor feed distribution in the feeders – especially before start of production when the birds are still not fed daily can stimulate aggressiveness and pecking. Also, the water level in the drinkers must be high enough to prevent competition. Any failure in feed or water distribution will worsen uniformity and can result in a part of the females showing signs of being beaten, poorly feathered and more frequently stressed by the males

Good litter quality, ventilation, correctly distributed and well maintained equipment (feeder height and distance between rows) are additional important points for good flock activity. As for the males, the use of feed with higher fibre content (4 to 6%) may help to reduce female nervousness. Flock activity is stimulated by distributing grain on the litter at the end of the afternoon (e.g. broken maize - 3 g / bird).

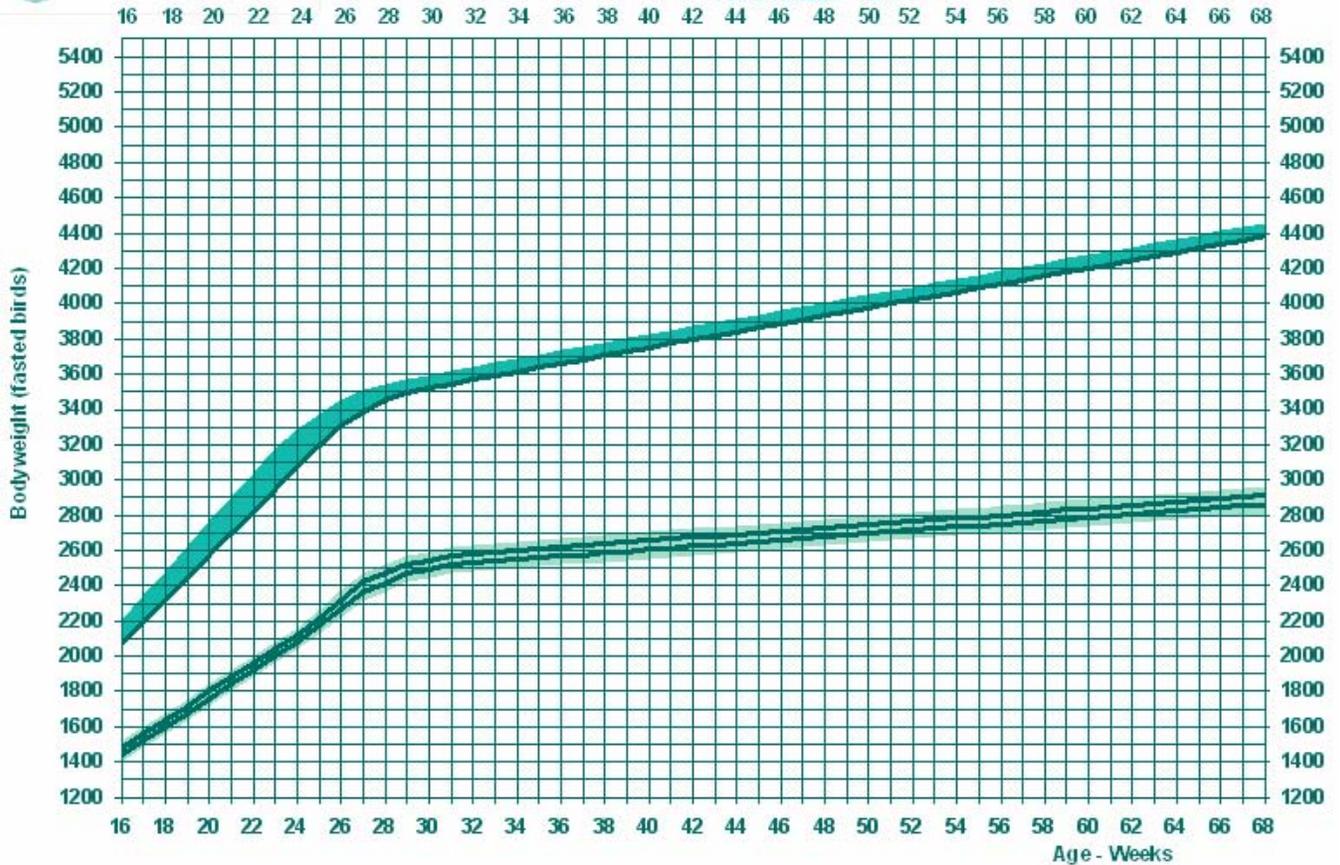


FEMALE GROWTH CURVE P15
WITH MALES M99





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