Hubbard
YOUR CHOICE, OUR COMMITMENT

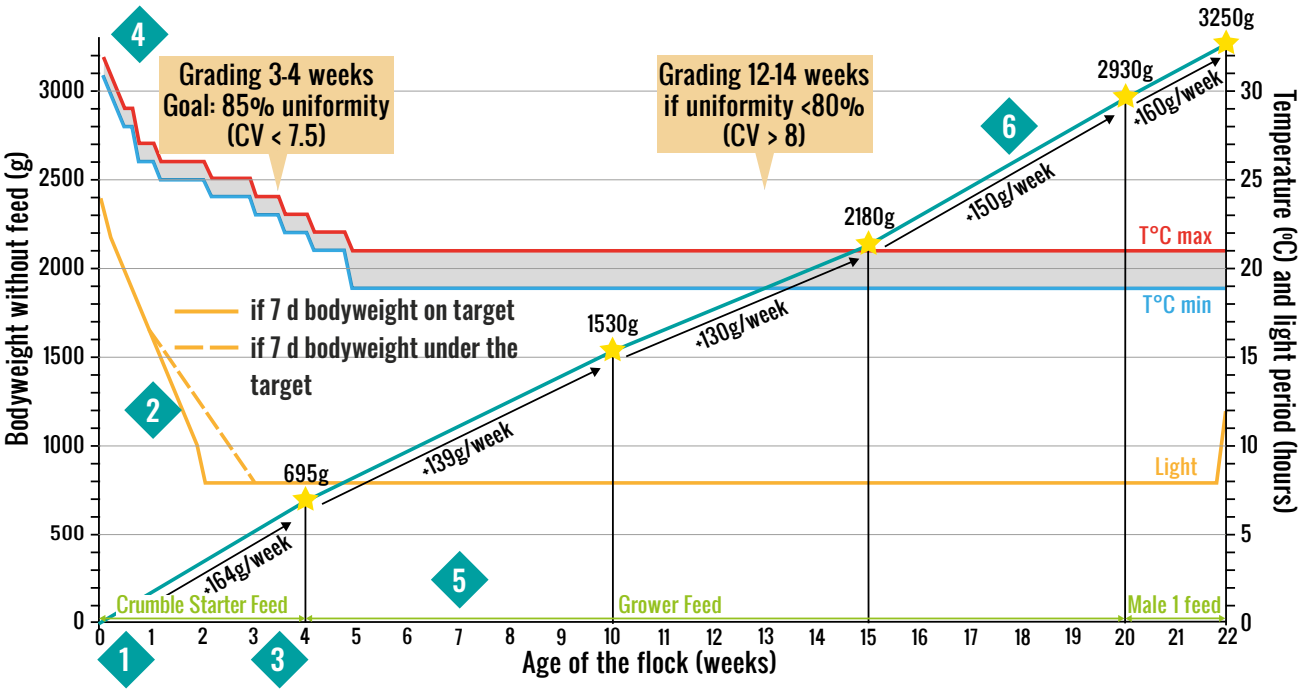
BREEDING FOR YOU SINCE 1921

HUBBARD CONVENTIONAL
the efficient choice!

MANAGEMENT GUIDE

MALE PARENT STOCK M77 MATED WITH CONVENTIONAL FEMALES

1. KEY MESSAGES REARING PERIOD (0-22 WEEKS): EQUIPMENT AND STOCKING DENSITY



0-4 weeks:	5-10 weeks:	11-15 weeks:	16-22 weeks:
Obtain a good start and a successful grading	Develop the skeleton of the birds	Control the muscle development	Prepare the males for a proper development of the testicles

Successful rearing = More than 80% males with a good sexual development at the time of the light stimulation (154-161 days of age) and in line with female maturity. All males should show straight legs, correct toes, beak, body conformation and feathering.

Flock management to be adapted according to the local rearing conditions (housing type, climate...).

1. *Ad libitum* feeding during the first 2 weeks and until 3 weeks of age if the 2 weeks bodyweight target is not achieved. Review again at 21 days before controlling feed amounts.
2. Combine the reduction of day length and light intensity in the first 2 weeks: 24 hours light/60 lux → 8 hours light/5-10 lux. If the males and females are brooded in the same house, then use the same lighting programme as for the Efficiency Plus females. In separate houses, it may be possible to delay the step down of light if growth is below target.
3. Provide 3-5 cm / male of perch space or 1-2 m² of platform / 500 males from 28 days to train the males to jump up to the slats.
4. Grade or at least isolate the smallest chicks from 7 days. Four weeks after the 4th week grading, the pen with the small males must reach the 8 weeks bodyweight target to secure skeletal development which is almost completed at this age.
5. Maintain 45-60 minutes eating time.
6. Avoid disruption in growth between 16-22 weeks (+150-160 g week), especially when changing feed type and after vaccinations. Assess body conformation on a regular basis. All the life of the flock:
   - Assure good distribution of both feed and water for a good flock uniformity.
   - Where possible males should be grown using the same type of feeder in rearing and in production.
   - Maintain good litter quality.
   - Meet the environmental and air quality requirements for a healthy flock.
   - Weigh 3-5% of the flock and at least 60 birds per pen per week.

EQUIPMENT AND STOCKING DENSITY DURING REARING

Stocking density *	3-4 males/m²
Brooders	1 for 500 chicks
Watering - bell drinker	1 for 80 birds
Watering - nipple	1 for 8-10 birds
Feeding - chain	20 cm/male (10 m/100 males)
Feeding - round pan	1 for 8 males
Feeding - oval pan	1 for 8-10 males
Spin feeder	1 for 1000-1200 males
Feed distribution time	< 4 minutes

** Stocking density may be subject to local regulations which must be observed at all times.*

Good shank length and comb development

i

Management guide Efficiency Plus PS

Performance Objectives M77 PS male mated with conventional females

Poster Feed distribution

Bulletin Grading

Hubbard YOUR CHOICE, OUR COMMITMENT BREEDING FOR YOU SINCE 1921

2. KEY MESSAGES PRODUCTION PERIOD (22-64 WEEKS): EQUIPMENT AND STOCKING DENSITY

LIGHT

➨ Same procedures as for females. To assure a good balance of the male and female sexual maturity, males may sometimes be stimulated one week earlier than females.

TRANSFER TIME (20-22 WEEKS) TO 27 WEEKS OF AGE

➨ Avoid disruption in growth between 20-27 weeks, especially when changing feed type (Male 1 diet from 20 weeks of age) and mixing males. Ensure the weekly growth rate is on target.

EQUIPMENT AND STOCKING DENSITY DURING PRODUCTION	
Watering - bell drinker	1 for 80 males
Watering - nipple flow 70 - 100 ml/min*	1 for 6 to 10 males
Feeding - chain	20 cm feeder space per male / 10 m length for 100 males
Feeding - round pan ø 35 cm - 13.8 in	1 for 8 males
Feeding - oval pan	1 for 8-10 males
Feed distribution time	< 4 minutes
Light intensity	60-80 lux

** Some nipple drinker systems are designed to operate with lower flow rates for breeders so check the manufacturer's recommendations or seek advice from your Hubbard Technical Manager.*

➨ Mixing is crucial to establish a good relationship between the males and females:

- ⊃ Mix males that are on target bodyweight with uniform skeleton size and good shank length (Ensure the 10 weeks bodyweight is achieve to maximise skeletal growth). Never mix shy and/or immature males.
- ⊃ Progressive mixing is preferred: 5% of males between 22-24 weeks and gradual increase to 8.5% at 25 weeks of age. More than 8.5% males could be a risk to maintain good female feathering and low floor eggs %.

➨ The risk of excessive weight gain and / or loss of condition up to 28 weeks is high:

- ⊃ Use a proper grill size 45 mm x 60 mm or adjust pan feeders to control male access to the female feeder. Also ensure that the corners of the feed track are sealed with covers. Check behaviour throughout the day to see if males are stealing feed.
- ⊃ Check feed distribution at least 2 times per week at first and then every week. Feed males when the first female feed is being distributed.
- ⊃ Weigh 3-5% of the flock and at least 60 males per pen weekly. Adjust feed according to both condition and bodyweight.

AFTER 28 WEEKS OF AGE

➨ Male bodyweight gain should be regular and within the range shown on the graph of the Performance Objectives. Feed to maintain their condition. ➔ See Performance Objectives ***"M77 PS male mated with conventional females"***.

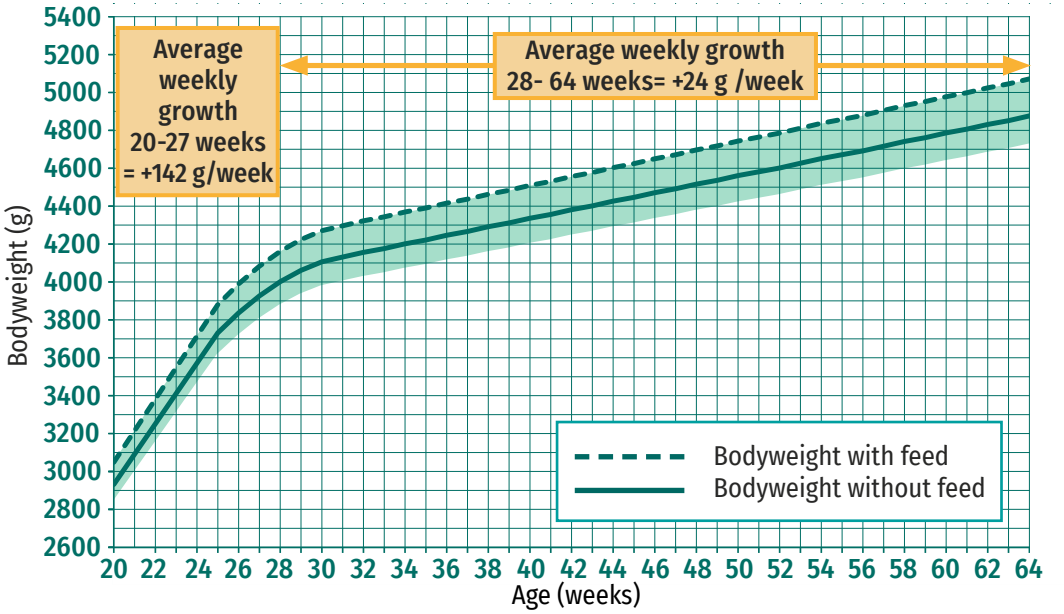
➨ Use the low protein male feed (Male 2 diet) which is one option to help to maintain male in good condition. ➔ See ***"Conventional Nutrition Recommendations"***.

➨ Male replacement to maintain fertility after 40-45 weeks of age only if all biosecurity risk controls at all times are respected. ➔ See Bulletin ***"Male replacement"***.

- ⊃ "Intra-farm" male replacement where males can be exchanged between houses.
- ⊃ External flock replacement where the males should come from a known source with known health status.

WATER

➨ Control water quality: pH = 5.5 to 6.8; Oxidation Reduction Potential (ORP) or Redox potential > 600 mV with chlorine; Chlorine concentration at the end of the pipe = 1 ppm (Acceptable range: 0.5 to 3 ppm). ➔ Maintain a good litter quality.



Growth targets for M77 during the production period

i

Management guide Efficiency Plus PS

Conventional Nutrition Recommendations

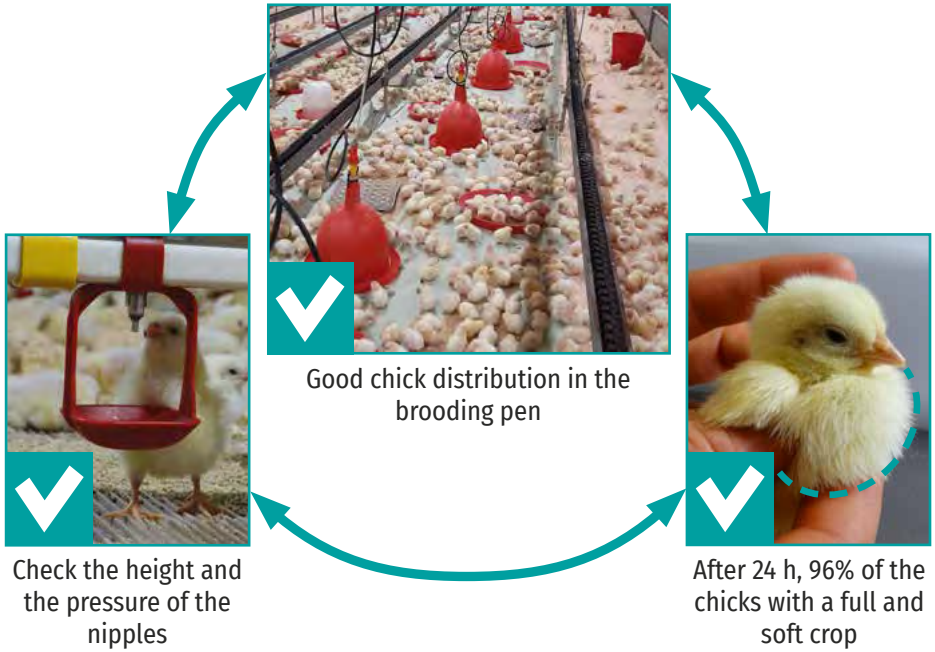
Performance Objectives M77 PS male mated with conventional females

Bulletin Water Quality

Bulletin Male replacement

3. REARING PERIOD (0-22 WEEKS): HOW TO HAVE A SUCCESSFUL BROODING PERIOD?

The key management practices are shown in our brooding poster. → See Poster ***"Brooding PS"***. Close observation during the first 10 days of the chicks in their environment will make brooding successful by by adjusting light, feed, water, equipment, heat and minimum ventilation.



Good chick distribution in the brooding pen

Check the height and the pressure of the nipples

After 24 h, 96% of the chicks with a full and soft crop

KEY POINTS

- Chick paper on at least 50% of the surface with feed and avoid a build-up of feed dust during the first 14 days.
- A daily growth graph for the period 0 - 35 days is available to follow early growth more precisely → See ***"Performance Objectives "M77 PS male mated with conventional females"".***
- Keep using starter crumbles if bodyweight not on target at 28 days and use grower feed if bodyweight is on target.
- Use of all the floor space by 10 days if brooders are used.
- Ideal pH: 5.5 to 6.8 with an optimal ORP or Redox potential higher than 600 mV (with chlorination) or chlorine concentration at the end of the pipe = 1 ppm (acceptable range: 0.5 to 3 ppm). Water at ambient temperature: 24-26°C.
- Grade or at least isolate the smallest birds from 7 days.
- If possible, use an intermittent lighting programme to promote early feed intake (e.g. cycles of 2.30h light/30 min dark from day 1 to day 7) and always respect the recommended hours of light below and a minimum of 4 cycles of light dark per day (if permitted by local regulations).
- The rate of step down of the photoperiod may often be slower (e.g. achieve 8 h light not earlier than 21 days) in the following cases:
  - For open-sided housing, allow birds to feed in the cooler part of the day. Also use the experience from the previous flocks.
  - When males and females are grown in the same house.
  - In case the target weight of the males is not achieved at 7 days.

Poster Brooding PS

AGE	Days	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
TEMPERATURE	Under the heaters	35-36				32-34			28-30							
	Living area	28					27-28		25-26							
	Whole house heating	31-32	30-31	29-30	28-29		26-27									
HUMIDITY	%	50-60														
EQUIPMENT	Drinker	1 round drinker for 60 birds; 1 nipple for 8 birds								1 round drinker for 80 birds; 1 nipple for 8-10 birds						
	Feeder	1 feeder/50-70 birds + chick paper (> 50%)								Chain feeder: 6-8 cm/bird; 1 oval pan feeder/13-14 birds*; 1 round pan feeder/12 birds						
DENSITY	Chicks/m²	25-30				12				6-8						
LIGHT PROGRAMME	Light duration (h)	24		22	21	20	19	18	17	16	15	14	13	12	11-12 **	8-12 **
	Intensity *** (lux)	60								40		20		5-10		
FEED	*Ad libitum*	*Ad libitum* for 2 weeks and until 3 weeks if the 2 weeks bodyweight is not achieved. Review again at 21 days before controlling feed amounts.														
	Feed type	Pre-starter crumbles or mini pellets (< 2.5 mm diameter) for a minimum of 14 days														

** Feeding space to be adjusted according to the behaviour of the birds.*
*** In case the target weights of the males are not achieved at 7 days.*
**** If permitted by local regulations.*

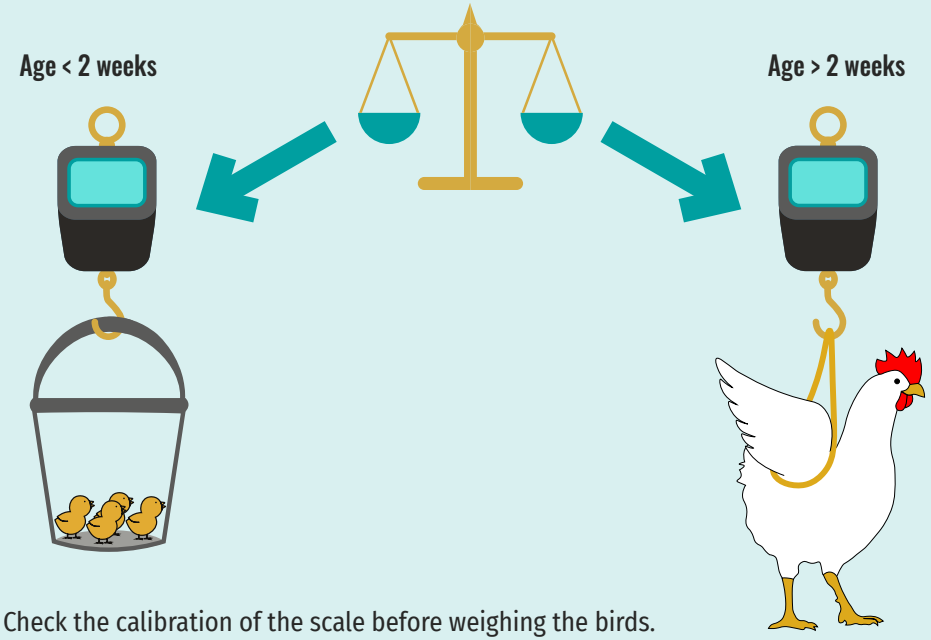
3. REARING PERIOD (0-22 WEEKS): HOW TO FOLLOW THE BODYWEIGHT TARGETS?

MANUAL WEIGHING

Every week, always the same day: hatch day is the best.

Best before feeding.

After feeding, use a with feed and water bodyweight target.



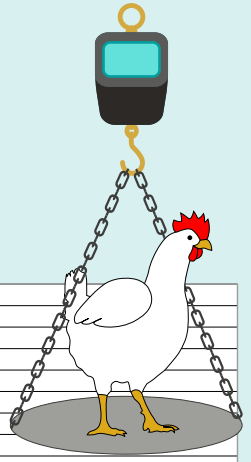
- Check the calibration of the scale before weighing the birds.
- Take samples from 3 separate places but not too close to the main feed hopper. Always keep the same location.
- **Sample size: 3-5% of the flock size and at least 60 birds per pen.**
- Weigh all the birds of the catching pen.

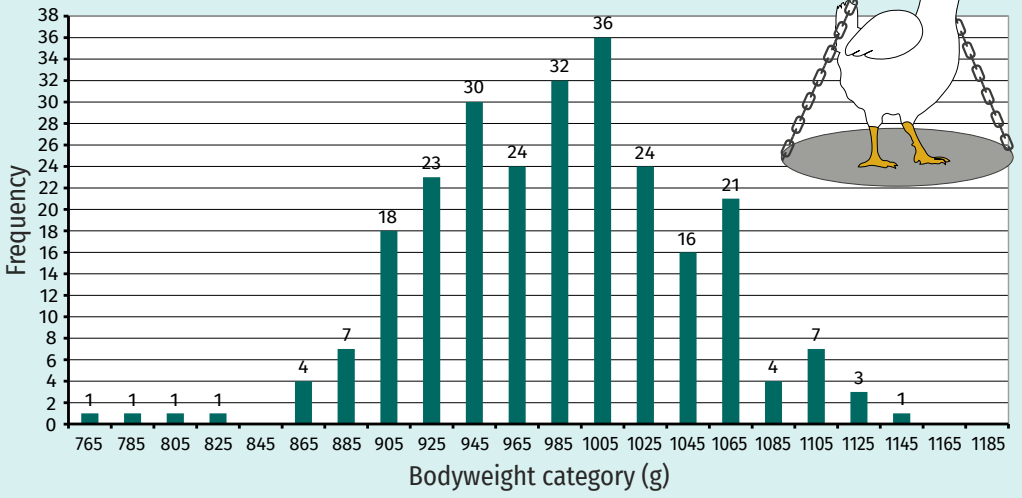
AUTOMATIC WEIGHING

Every week, always the same day: hatch day is the best.

Best before feeding.

After feeding, use a with feed and water bodyweight target.





Results from an automatic scale - good bodyweight distribution

- Ensure to place the scales as soon as possible to maximise the number of birds weighed.
- Always check the number of birds weighed per pen (at least 300 birds/weighing) and make sure that the bodyweight distribution shows a "bell curve" shape (see figure above). The lower and upper limits of the bodyweights often need to be adjusted.
- If an unexpected variation of the bodyweight from the objective is observed, it is recommended to re-weigh by hand a new sample.
- Check weekly the calibration of the platform scales.

Analysis of the weekly results for an optimal feed allocation management:

1. In order to define properly the feed allocation per bird, the primary objective is to use the bodyweight average calculated once the weighing has been completed.
2. Compare the average bodyweight with the bodyweight target. Plot the average weight on the growth curve to see the trend.
3. Calculate the weekly gain and compare it with the objective mentioned in the Performance Objectives ***"M77 PS male mated with conventional females"***.
4. Adjust feed allocation according to the weekly weight gain achieved and the weight gain targeted for the next week. Please do not strictly follow the feed intake targets as they are only provided as a guideline and consider actual feed increases.

3. REARING PERIOD (0-22 WEEKS): HOW TO REACH AND MAINTAIN A GOOD FLOCK UNIFORMITY?

There are two possible indicators to express flock uniformity:

1. Uniformity is defined by the percentage of birds weighing between +/- 10% around the average flock bodyweight. ➔ See chart below.
2. The coefficient of Variation (CV) is the variation of bodyweights within the flock (= Standard deviation/average flock bodyweight). The lower the CV%, then the flock is more uniform.

GRADING

➨ 7 days: grade or at least isolate the smallest chicks by eye and manage them with special care to achieve target weight by 4 weeks.

Good feed distribution

➨ 21-28 days: grade 100% of the flock and create weight groups, each with at least 85% uniformity (CV < 7.5). ➔ See Bulletin ***"Grading"***.

➨ 29-84 days: aim to maintain or improve flock uniformity by having a close follow up of the feed distribution. ➔ See Poster ***"Feed distribution"***. Poor wing feather quality may be an indication of poor feed distribution or feeder management.

5 weeks old males after grading

➨ 84-98 days: if flock uniformity is less than 80% (CV > 8), re-grade the flock to assure that each weight group achieves at least 85% uniformity (CV < 7.5). Have a close bodyweight follow up during the vaccination periods. Anticipate this with extra feed.

FEED PROGRAMME

➨ Daily feeding gives successful results in many situations. If fractionated feeding is considered then please contact your Hubbard Technical Specialist to discuss possible solutions to optimise feed distribution.

➨ Adjust the feed depth in the feeders each time the feed allocation is changed to assure the correct distribution.

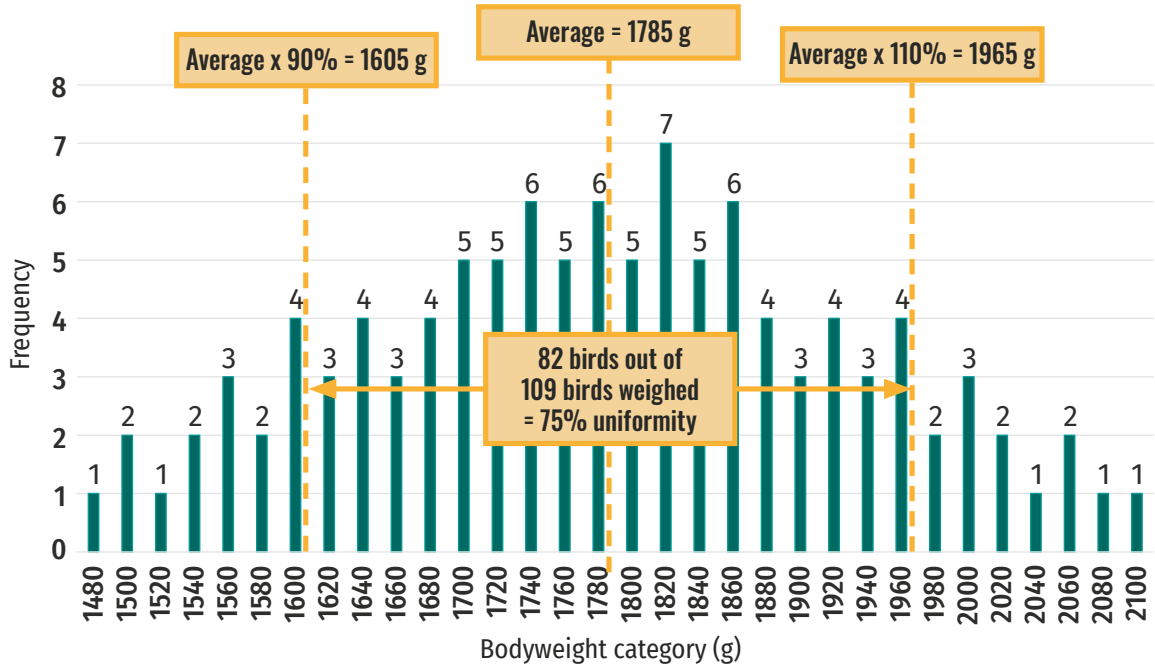
➨ Use of a low energy grower feed (< 2650 kcal/kg) is preferred to improve gut health and eating behaviour. If high fibre sources are added to the feed these must be of consistent quality and mycotoxin free. ➔ See Bulletin ***"Dietary fibre"***.

i

Bulletin Grading

Bulletin Dietary fibre

Poster Feed distribution



Results of one manual weighing - % uniformity definition

3. REARING PERIOD (0-22 WEEKS): HOW TO PROMOTE A GOOD BEHAVIOUR AND PROVIDE A GOOD ANIMAL WELFARE?

For all enrichments it is important to consider the risks to compromise biosecurity, especially from straw or other bales and material brought into the house and also the ease of washing of fixed enrichments like platforms.

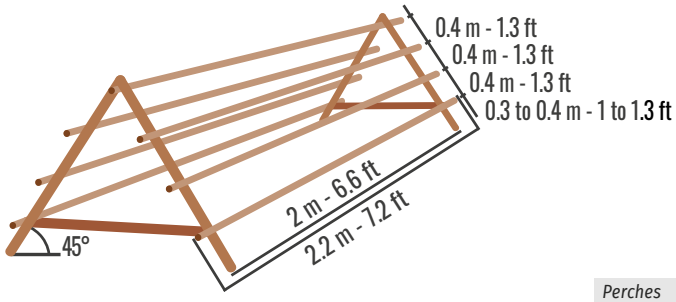
➨ PERCHES

From 28 days, the use of a perching system is strongly recommended to stimulate activity and to train birds jump onto the slats.

- Provide 3-5 cm of perch space per bird.
- Provide 1-2 m² of platform for 500 birds. Optimal position of the platform is under the drinking system once the birds are able to jump onto the slats.

Platforms not under the drinking system at the early age

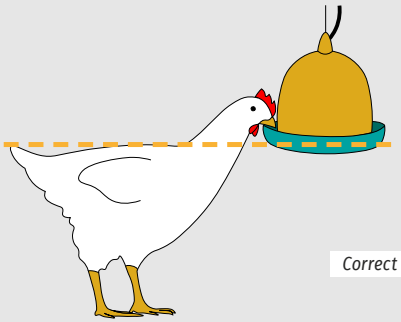
- Platforms and perches should not have sharp edges that may damage birds.



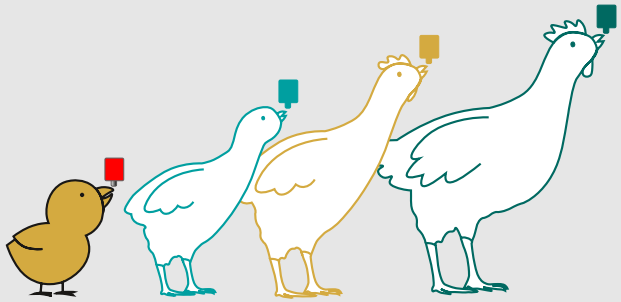
Perches

➨ WATER MANAGEMENT / WATER QUALITY

- Provide *ad libitum* water during extremely hot weather or medication treatment.
- With a regular and proper management of drinker height and water flow according to flock age, no control access to water should be needed.
- Control access to water 2-3 hours after the end of the feed clean-up (if permitted by local regulations). The crop should be soft before closing the water.



Correct bell drinker height



Correct nipple height

- Regularly check the chemical and bacteriological water quality to ensure that water sanitation is working properly:
  1. Optimal pH: 5.5 to 6.8.
  2. Optimal ORP or Redox potential higher than 600 mV with chlorine.
  3. Chlorine concentration at the end of the pipe: target = 1 ppm (acceptable range: 0.5 to 3 ppm).

➨ GRIT AND GRAIN - optional - consider the risks to biosecurity.

- Insoluble grit to promote the gizzard development:
  1. ø 2-3 mm: 3-5 g/bird/ week from 5 weeks of age.
  2. ø 3-5 mm: 3-5 g/bird/week from 10 weeks of age.
- Scratch grain (cracked maize or whole wheat): 3 g/bird/ day 4-5 hours after feeding from 5 weeks of age.

➨ ENRICHMENT - optional unless required by local regulations.

- White ropes – max 20 cm long – no contact with the litter.
- Wood shaving balls – 1 piece for 500 to 1000 birds, placed on floor.
- Pecking blocks – 1 piece for 500 to 1000 birds – Consider the hardness of the material.
- Alfalfa balls – 1 piece for 500 to 1000 birds, placed on floor.

Example of white ropes

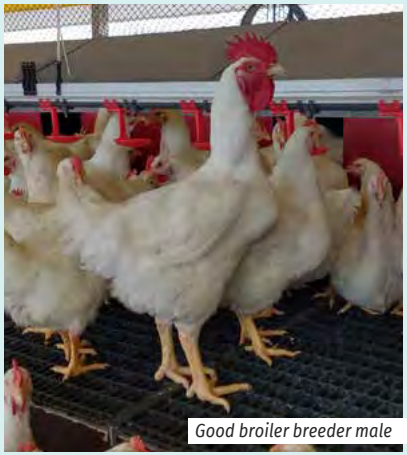
Pecking blocks

Example of alfalfa balls

4. PRODUCTION PERIOD (22-64 WEEKS): HOW TO HAVE A SUCCESSFUL MIXING PERIOD AND GOOD EARLY FERTILITY?

OBJECTIVE: REACH MORE THAN 92% FERTILITY AT 27 WEEKS OF AGE.

- The objective is to avoid disruption in growth between 20-27 weeks which is a key period to develop the fertility potential of the males.
- A good broiler breeder male shows a good beak, long shanks, a good body condition (fleshing score: 2-3), good legs and feet (no bent toes, footpads with no injury), red comb and wattles, good feather cover with partial feather loss and a red and moist vent.


Good broiler breeder male

LIGHTING PROGRAMME

- Use the lighting programme table of the female Efficiency Plus. → See ***"Performance Objectives Efficiency Plus"***.
- If the sexual maturity is poor at 20-21 weeks of age (poor fleshing score: > 30% of the males with score 1), it is possible to give the first stimulation one week before the females.

MALE TRANSFER BEFORE THE FEMALES (20 TO 22 WEEKS)

- Where possible, it is a good practice to place males in the production house 3 to 5 days before the females to allow males to have a better adaptation to the new feeding and drinking systems (especially if spin feeding is used in rearing).
- Place males all along the house for a uniform distribution and not near a door.
- During the first days after the transfer, check if they find drinkers and feeders especially if changing compared to the rearing house. The male feeding system could be lowered to help them find the feed.
- Use Male 1 diet from 20 weeks of age.

MALE MIXING

- Mix males that are on target bodyweight with uniform skeleton size and good shank length. Never mix shy, immature or underweight males as they will be dominated by the females.
- For a better integration mix males ideally in the evening. Carefully observe the male / female interaction. Progressive mixing is ideal (2 or 3 steps):
  - 5% between 22-24 weeks and gradual increase to 8.5% at 25 weeks of age. A place will be needed to store the spare males following proper conditions (density and equipment).
  - More than 8.5% could be risky to maintain good female feathering and low floor eggs %.

i

Performance Objectives M77 PS male mated with conventional females

The risk of excessive weight gain and/or loss of condition up to 28 weeks is high:

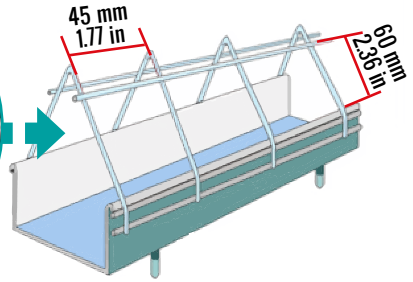
- Weigh at least 60 males per pen weekly. Adjust feed according to both male condition and bodyweight.
- Check feed distribution at least 2 times per week at first and then every week to correct feed allocation and distribution if need be. It is better to attend to the feed distribution to make sure that every male has a normal access to the feeders.
  - Use a proper grill size 45 mm x 60 mm or adjust pan feeders to control male access to the female feeder. Also ensure that the corners are sealed with covers. Check behaviour to see if males are stealing feed.
  - Feed males in the morning when the first female feed is being distributed. The feed distribution needs to be uniform all along the feeding system (check if the sensor of the last pan feeder works properly).
  - The male feeder should be high enough to prevent the females from eating with the males. Consider the risk of under-feeding, e.g. if male activity is very high which will affect energy requirement. The comb will be paler and listless and body conformation will change. Avoid irreversible moult.


Manual linear feeder for males – not enough stable


Automatic pan feeder for males – too high


Importance of controlling male access to the female feeder. Yellow circle: open feed access for males


House design with female chain feeder and males with manual linear feeder (middle)



Importance of the grill size on female feeders

OBJECTIVE: MAXIMISE THE FERTILITY RATES UNTIL DEPLETION.

MALE CONDITION/BODYWEIGHT CONTROL

- Weekly control of male bodyweight (3-5% of the flock and at least 60 birds/pen), male condition (fleshing (shape and amount of breast), footpads, vent) is essential.
- Check the mating activity in the last 2 hours before lights are turned off by sitting on a chair along the sidewalls for at least 30 min. Please seek advice from your Hubbard Technical Manager.
  - Record the number of mating attempts: it may normally be between 60 and 100 per hour for 1000 females.
  - Record the number of hens that escape after one mating attempt. It should not be above 30% of the number of mating attempts.

ANALYSIS OF THE WEEKLY RESULTS FOR AN OPTIMAL MALE MANAGEMENT

- Feed:
  - Feed should be immediately adjusted at any time that bodyweight drifts away from the recommended objective.
  - Boost feeding especially when a decrease of the fleshing score is observed e.g. 2 to 3 days with 150% of the current daily feed allocation.
  - Use of Male 2 diet after 30 weeks of age (lower protein and higher energy content) to meet the weekly growth targets and to allow males to maintain sufficient energy intake without an increased risk of excess fleshing. → See ***"Conventional Nutrition Recommendations"***.
  - Check the physical quality of the feed on a regular basis using the Hubbard feed sieve and the Hubbard software. → See ***"Hubbard Feed Sieve Tool"***.
- Regular culling of poor-quality males.
- Mating activity could be encouraged by distribution of grain in the late afternoon after 40 weeks of age (e.g. 1g/bird every 2-3 days) and/or adjustment of the sex ratio.
- **MALE REPLACEMENT:** Biosecurity must be considered before doing this, especially in areas with all health risks. → See bulletin ***"Male replacement"***.
  - Inter-house male replacement does not require importing males from outside. All poor-quality males are taken out and humanely euthanized and replaced by males with similar bodyweight.
  - External male replacement with young males (25-28 weeks old) involves strict sanitary control of the new males. Between 20 and 30% of the male flock size will be replaced to stimulate the old males and will replace the males with poor physical condition.

Conventional Nutrition Recommendations | *Hubbard Feed Sieve Tool* | *Bulletin Male replacement*

LITTER MANAGEMENT

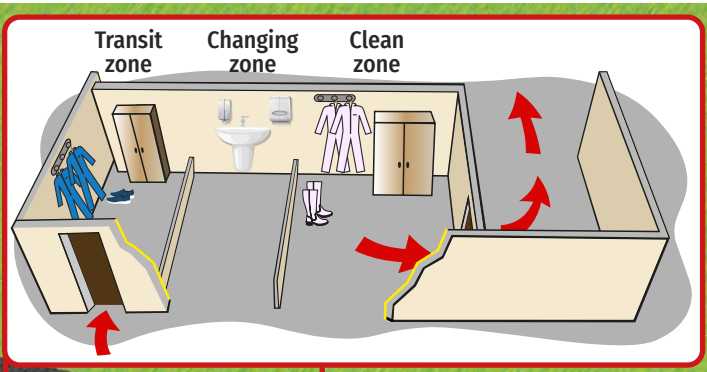
Litter/bedding storage in an adapted biosecure area to maintain the pathogen-free status (inside the house).

No accumulated litter at the end of the cycle.

SHED TO SHED ACCESS

If corridor between the two houses provide three-zone entry.

If no corridor between the houses, provide one shower unit in each house.



VISITORS

Restrict visitors and adapt quarantine period.

Provide shower facilities.

Provide change of clothes and boots.

VEHICLES

Vehicles must be cleaned prior to entering the farm facility.

DO NOT allow unauthorised vehicles on the farm.

Make sure all feed and gas deliveries stay outside of the fence.

Bags are to be worn on shoes from cars into the shower facilities.

EXTERIOR

Do not treat the concrete or area inside the fence as clean.

INTERIOR

Easy to clean and disinfect concrete floor.

Easy to clean and disinfect equipment. The resting period ideally lasts for at least 10 days.

Ensure good quality water is available.

ANIMAL CONTROL

Keep other livestock away from facility.

PEST CONTROL

Establish regular baiting for rodents and insects, prevent access of wild birds according to local regulations.

KEEP A RECORD

Visitors, feed/litter delivery, cleaning and disinfecting, pest control.

1. Freezer room: disposal of dead birds in a biosecure freezer.
2. Gas tank
3. Fumigation room
4. Egg storage room
5. Vehicle disinfection unit
6. Staff room

Go forward principle

Hubbard

YOUR CHOICE, OUR COMMITMENT

BREEDING FOR YOU SINCE 1921

The performance data contained in this document was obtained from results and experience from our own research flocks and flocks of our customers. In no way does the data contained in this document constitute a warranty or guarantee of the same performance under different conditions of nutrition, density or physical or biological environment. In particular (but without limitation of foregoing) we do not grant any warranties regarding the fitness for purpose, performance, use, nature or quality of the flocks, nor any warranty regarding compliance with local legislation regarding health, welfare, or other aspects of animal production. Hubbard makes no representation as to the accuracy or completeness of the information contained in this document.

AMERICAS
HUBBARD LLC
123 Gallus Rd
PIKEVILLE, TN 37367 – U.S.A.
TEL. +1 (423) 447 6224
contact.americas@hubbardbreedersusa.com

EUROPE, MIDDLE EAST, AFRICA
HUBBARD S.A.S.
Mauguérand
22800 LE FOEIL – FRANCE
TEL. +33 2 96 79 63 70
contact.emea@hubbardbreeders.com

ASIA
HUBBARD S.A.S.
Mauguérand
22800 LE FOEIL – FRANCE
TEL. +33 2 96 79 63 70
contact.asia@hubbardbreeders.com

V-2024-11