

Management of Broiler Breeder Males in the Absence of Spur Treatment

**Aviagen Spur Management Working Group*

Introduction

Management of broiler breeder males with intact spurs is a common practice globally. In addition, due to changing practices, agreed management schemes and/or regulations, many countries have already stopped using spur treatment, while others plan to phase it out in the near future.

For many years, spur treatment has been used to help prevent perceived damage to broiler breeder females during mating, to minimize skin lesions in males who compete for dominance and to aid in the personal safety of those handling the males on a regular basis. Internal data, as well as the experiences of Aviagen® Technical Managers, have shown that good production and welfare of males with intact spurs is possible with proper management.

The purpose of this document is to highlight key male management areas which are important in flocks with intact spurs. There is no specific “magic solution.” However, following Aviagen’s best practice recommendations will allow flock managers to achieve production targets with a healthy flock, minimal female damage, reduced male competition and a focus on employee safety.

Background

Although spur treatments were initially introduced as a way to lessen the impact of skin lesions and feather damage, it is important to note that de-spurring **does not** prevent these. Feather cover plays a key role in protecting the bird from injury, and by achieving good feather cover, any perceived damage is eliminated or greatly reduced (**Figure 1**). If males are seen to be over-eager during mating-up, which can influence female feather damage, it will be necessary to review sexual synchronization and mating-up procedures, as well as mating ratios.

Figure 1: Mating of a fully-feathered female and a male with intact spurs, showing no signs of hind quarter damage to the female.



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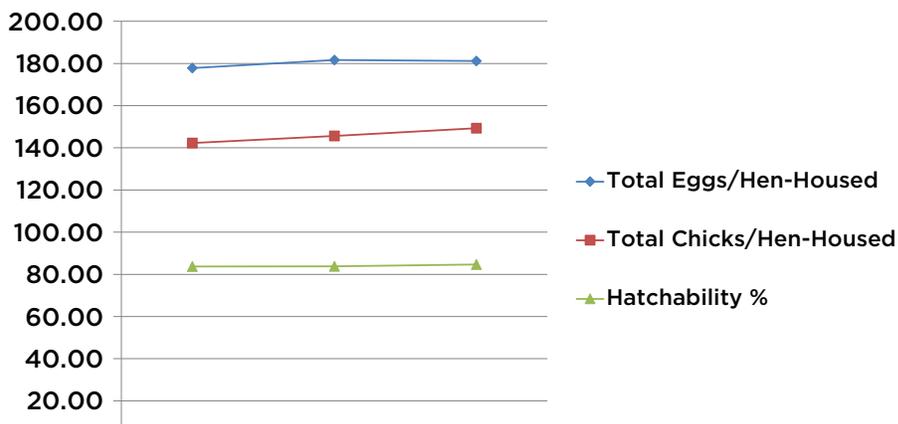
Skin lesions and/or feather damage can occur due to competitiveness for dominance or feed (true for males and females), requiring a closer look at feed distribution and clean-up time, feeding/drinking space and stocking densities.

Employees should be experienced and adequately trained in bird handling procedures to aid in the prevention of injuries to themselves and the birds. All birds should be handled with the care that is appropriate for their age, sex and purpose.

Internal Data

Aviagen has managed flocks with intact spurs throughout the world for many years. Recent data comparing treated and untreated flocks from 2016 and 2017 (treated) and 2018 (untreated) (**Figure 2**) shows that there is minimal change in hatchability and total eggs per hen-housed, and an increase in total chicks since stopping spur treatments.

Figure 2: Change in hatchability, total eggs and total chicks in treated (2016 and 2017) and untreated (2018) flocks.



Best Practice Management Considerations

Stockmanship and Bird Handling - Good stockmanship is paramount when managing flocks in the absence of spur treatment. Knowing what to look for and being able to identify potential issues early on will help a flock manager determine if damage or injuries to birds are spur related or caused by another factor.

Careful and correct handling of males will safeguard the stockman from scratches or lesions due to intact spurs. Wearing gloves when working with males offers additional protection.

Stocking Density and Floor Space - When managing males in the absence of spur treatment, ensure that stocking density (**Table 1**) and feeding and drinking space is optimal from rearing through to depletion. Increases in stocking density must be accompanied by appropriate adjustments in the environment, feeders and drinkers to prevent reductions in biological performance. When calculating floor space, make necessary reductions to account for equipment in the bird area.

Table 1: Recommended male stocking densities for rearing and production.

Rearing 0-140 Days (0-20 weeks) birds/m ² (ft ² /bird)	Production 140-448 Days (20-64 weeks) birds/m ² (ft ² /bird)
3.0-4.0 (2.7-3.6)	3.5-5.5 (2.0-3.1)

Feeding and Drinking Management - Good feeding management ensures all birds can eat simultaneously and there is no overcrowding at the feeders. Provide adequate feeding space (**Table 2**) and uniform feed distribution. Detecting and correcting feeding issues early will help to reduce injuries due to competition for feed.

Table 2: Ideal feeder space per bird.

FEEDER SPACE PER BIRD		
Males Age	Track cm (in)	Pan cm (in)
0-35 days (0-5 weeks)	5 (2)	5 (2)
36-70 days (5-10 weeks)	10 (4)	9 (3.5)
71 - 140 days (10-20 weeks)	15 (6)	11 (4)
141 days - depletion (20 weeks - depletion)	20 (8)	13 (5)

Drinker space requirements are shown below in **Table 3**. Bird distribution around the drinkers should be uniform, with no signs of crowding.

Table 3: Recommended drinking space.

DRINKER SPACE		
	Rearing Period (0-15 Weeks)	Production Period (16 Weeks to Depletion)
Automatic circular or trough drinkers	1.5 cm (0.6 in) / bird	2.5 cm (1.0 in) / bird
Nipples	1 / 8-12 birds	1 / 6-10 birds
Cups	1 / 20-30 birds	1 / 15-20 birds

Feed Distribution and Feed Clean-up Time

Delivering feed around the house should happen in as little time as possible (within 3 minutes), to obtain an equal distribution of nutrients for each bird. It's a good practice to distribute the feed in the dark, so that when lights come on the feed will be in front of the birds, keeping competitive behavior to a minimum. To identify negative behavior as a result of inappropriate feed distribution, the flock manager should observe the birds regularly at feeding (2-3 times per week). If issues are noted, further investigation into the feeding system (mechanical issues, feeder height, feeder space, feed depth, etc.), feed form and quality, as well as feeding management practices (stocking densities and floor space) should be completed and corrective measures taken.

Different flocks have different eating behaviors and different feed clean-up times. With the aim to assure uniform feed and nutrients are distributed among the birds, the feed clean-up time should be reviewed frequently. At peak production, feed clean-up time is normally in the range of 2 to a maximum of 4 hours at 19-21°C (66-70°F), depending on feed physical form.

Sexual Synchronization and Mating Ratios

Correct sexual synchronization plays a critical role in the success of male and female mating-up and production performance. Attention to proper synchronization is crucial for the development of the flock, lessening the likelihood of over-mating and subsequently, possible female feather damage or skin lesions. In the weeks leading up to light stimulation, males should be monitored for body condition and increased facial color; these are indicators of progress in sexual development. Immature males should never be mated with mature females, and vice versa.

In the early stages after mating-up, it is quite normal to observe some displacement and wear of the feathers at the back of the female's head and on the back at the base of the tail. When this condition progresses to the removal of feathers, it is a sign of over-mating. If mating ratios are too high and females begin to lose feathers, the risk of damage from males increases.

A guide to mating ratios is given in **Table 4**, however, they should be adjusted to local circumstances, flock condition and reviewed on a weekly basis.

Table 4: Mating ratio guide.

Age		Number of Good Quality Males Per 100 Females
Days	Weeks	
154 - 168	22 - 24	9.50 - 10.00
168 - 210	24 - 30	9.00 - 10.00
210 - 245	30 - 35	8.50 - 9.75
245 - 280	35 - 40	8.00 - 9.50
280 - 350	40 - 50	7.50 - 9.25
350 to depletion	50 to depletion	7.00 - 9.00

Male Replacement – Although not recommended, male replacement may be done to generate a positive response in late fertility. It should be implemented with caution, however, as it may have potential negative impacts on the flock, such as aggression, competitiveness, biosecurity risks and potential reductions in fertility.

Key Points

Good management of flocks with intact male spurs requires a multi-factorial approach, and damage to females (or other males) may not always be caused by spurs. Using the best-practice advice provided in the **Parent Stock Handbook** will reduce or eliminate the need for spur treatment in males. Key points which are important in the absence of spur treatment are:

- Ensuring proper sexual synchronization of males and females at mating-up.
- Attention to the development of flock in the first week after mating-up.
- Good stockmanship and bird handling practices.
- Maintaining the correct stocking density from placement through to depletion.
- Adhering to the recommended feeding and drinking space requirements.
- Ensuring good feed distribution and an ideal feed clean-up time.
- Keeping mating ratios at the recommended levels.
- Careful and thoughtful use of male replacement programs.

***Aviagen Spur Management Working Group**

Anne-Marie Neeteson, VP of Welfare and Compliance; Dr. Jose Bruzual, Senior Poultry Veterinarian; Marco Aurelio Romagnole de Araujo, Technical Services Manager; Jorge Amado, Head of Technical Services – Mexico, Central America; Osvaldo Bolinaga, Technical Services Manager – Latin America; David Jimenez, Area Sales and Technical Manager – Spain; Tommy Taylor, Head of GP Farming Operations; Niamh Molloy, Technical Service Manager – Aviagen UK, Ltd.; Tim Burnside, Global Manager of Welfare and Compliance; Randall Vickery, Regional Technical Manager – North America; Dr. Vanessa Kretzschmar-McCluskey, Global Technical Transfer Manager

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