

Nutrition and Feed Management for Ross 308 AP Parent Stock in North America

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INTRODUCTION

The Ross® 308 AP is a robust bird with outstanding broiler characteristics (i.e. growth rate, uniformity, feed efficiency and carcass yield), and excellent reproductive performance providing a well-balanced package for the broiler industry. This product was first launched in Latin America, and after a period of familiarization, our customers were able to manage this bird to optimal performance. Those nutritional and feed management experiences are expressed in this document, and specific points of comparison with the Ross 708 female are provided.

The Ross 308 AP female has a vigorous appetite, and is more responsive to excessive dietary lysine than other females, resulting in a greater need to control fleshing. Consequently, it is necessary to utilize certain quantitative and qualitative feed and nutrient control practices when rearing this particular genotype.

FEEDING STRATEGY

The Aviagen® 3-stage feeding program during rear is recommended for the Ross 308 AP female. Dietary protein, and particularly digestible lysine (dLys), is controlled or reduced in order to promote fat reserve deposition and control fleshing. Current advice for Grower feed provision to Ross 708 pullets is for a level of 0.61% dLys (in a 1270 kcal of ME/lb diet); however, to better control growth and fleshing of the Ross 308AP it is suggested to reduce dietary dLys to 0.514% (in a 1200 kcal of ME/lb pullet Grower diet), an 11% reduction. **Table 1** illustrates the suggested nutrient specifications; it is recommended that dLys be reduced in the Grower and Pre-Breeder phases only.



Table 1: Parent stock nutrition recommendations for Ross 308 AP females using a 3-stage feeding program.*

Age Fed	days	Starter	Grower	Pre-Breeder	Breeder 1	Breeder 2	Breeder 3
		0-28 days	29-140 days	141 days to 5% production	5% production to 224 days	225-315 days	After 315 days
Energy per lb	kcal	1300	1200	1250	1300	1300	1300
Energy per kg	kcal	2863	2643	2753	2863	2863	2863
	MJ	12.0	11.1	11.5	12.0	12.0	12.0
DIGESTIBLE AMINO ACIDS							
Lysine (max)	%	0.97	0.51	0.51	0.61	0.57	0.53
Methionine	%	0.47	0.34	0.32	0.38	0.37	0.36
Methionine + Cystine	%	0.76	0.55	0.51	0.60	0.58	0.55
Threonine	%	0.67	0.47	0.42	0.50	0.48	0.48
Valine	%	0.73	0.57	0.46	0.57	0.54	0.52
Tryptophan	%	0.20	0.17	0.17	0.16	0.15	0.14
Arginine	%	1.07	0.74	0.69	0.81	0.79	0.74
Leucine	%	1.14	0.74	0.74	0.88	0.87	0.82
Isoleucine	%	0.63	0.49	0.42	0.51	0.49	0.46
Crude Protein	%	19-21	13-14	14-15	15.0	14.0	13.0
MINERALS							
Calcium	%	1.00	0.90	1.20-1.50	2.80-3.20	3.00-3.40	3.20-3.60
Available Phosphorus	%	0.45	0.45	0.40	0.38	0.37	0.36
Sodium	%	0.20-0.22	0.20-0.22	0.20-0.22	0.18-0.20	0.18-0.20	0.18-0.20
Chloride	%	0.20-0.35	0.20-0.35	0.20-0.35	0.20-0.23	0.20-0.23	0.20-0.23
Potassium	%	0.60-0.90	0.60-0.90	0.60-0.90	0.70-0.90	0.65-0.90	0.60-0.90

*When using different energy densities than those listed above, it is important that amino acids are adjusted proportionately. Trace mineral and vitamin recommendations remain the same as in the Ross 708 PS nutrient recommendations.

As previously mentioned, the Ross 308 AP female has a vigorous appetite and poses a greater challenge to maintain body-weight uniformity than Ross 308 or Ross 708 females, even after multiple grading sessions. Good management is critical after 10-15 weeks, due to the small amounts of daily feed allocation and especially when feeding higher energy level feeds. It is therefore recommended to feed a lower density diet (<1250 kcal/lb).

FEED MANAGEMENT

Feed volume can be increased as a way to extend feed clean-up times (≥40 minutes is advised) and promote body-weight uniformity. Feed clean-up time monitoring is a crucial practice with this genotype to determine the correct feeding frequency changes. In order to provide increased feed volume, a diluted pullet Grower diet (1200-1225 kcal/lb, 0.51-0.52% dLys) with the proper adjustment of dietary amino acid levels is recommended (amino acid levels in **Table 1** have already been adjusted to 1200 kcal/lb in the pullet Grower diet). Lowering the pullet Grower feed to a dietary energy density of 1200-1225 kcal/lb, can be achieved using lower energy diluent ingredients (e.g. wheat middlings, rice mill-feed, rice hulls, oat hulls, soya hulls). When using diluents it becomes important to use consistent products with a firm understanding of their nutritional contribution. It is crucial to monitor feed clean-up times closely. If the advised time is not achieved (40 minutes minimum), feeding frequency programs (6×1, 5×2, 4×3) become necessary to ensure that all Ross 308 AP females receive the correct amount of feed in order to maintain good body-weight uniformity. Consult your Ross representative for specific advice.

MANAGEMENT RECOMMENDATIONS

General parent stock management advice can be found in the **Ross Parent Stock Management Handbook**, however it is important to highlight the recommendations for feeder space and provide 2 in/bird at 5 weeks, 4 in/bird at 10 weeks, and 6 in/bird from 15 weeks onward (including the Lay period). This will help to maintain uniformity and prevent abnormal behaviors from emerging.

Grading is routinely practiced in Latin America for the Ross 308 AP and is strongly encouraged when rearing this genotype in other regions. Routine grading allows customers to more closely manage growth rates of their pullet flocks and ensure that smaller size birds receive a fair share of feed in rear.

DISTINCT 308 AP FEMALE CHARACTERISTICS

Within our female portfolio, the Ross 308 AP presents the largest carcass frame at maturity. This larger frame will also increase maintenance energy requirements, and result in a relatively higher demand for caloric intake during production compared to Ross 708 females. Furthermore, it is important to pay special attention to male development during the Starter phase in order to avoid issues during mating-up. Removal of birds below the target standard body weight at 4 weeks is advised in order to avoid transferring short shanked males. Consult your Ross representative for specific advice.

In some instances, feather licking and feather pecking have been observed in Ross 308 AP flocks. In extreme cases, birds exhibited behaviors which potentially posed a threat to other birds in the flock. In a particular instance, this occurred when dietary tryptophan levels in ingredients were overestimated in high lysine pullet Grower diets.

FEED FORMULATION RECOMMENDATIONS

It is common in the industry to rely on high dietary inclusion of wheat bran/middlings as a diluent in pullet rearing feeds to reduce dietary energy levels. Wheat by-products have a tryptophan to lysine ratio ranging between 1.5-1.8%. When wheat bran/middlings are above 15% in pullet Grower diets, a more conservative approach is recommended in relation to the dietary tryptophan contribution by applying enough margin of safety to avoid the occurrence of abnormal behaviors. In addition, a higher level of digestible tryptophan (>0.17%) is encouraged for the Ross 308 AP in pullet diets to reduce the risk of feather licking and/or feather-pecking.

Peak energy intake of 472 kcal/female/day is generally recommended for Ross 308 AP females in the **Ross 308 AP Parent Stock Performance Objectives**, but several factors can influence the energy needs of hens in production. Some of these factors include body weight, egg mass output and season or house temperature. Current Ross 308 AP breeder performance in Latin America, with peaks approximating 88-91%, have required a slightly higher energy allowance of 485 kcal/bird/day and 24-25 g of crude protein/bird/day.

EGG SIZE

The Ross 308 AP female typically lays a larger egg relative to the Ross 708 female. The use of a 3-stage breeder feeding program during lay is recommended as a way to control late egg size. A switch to a Breeder 2 diet is advised when egg weights reach 60 g (approximately 32 weeks), and to the Breeder 3 diet at 65 g egg weights (approximately 45 weeks).

KEY POINTS

- The Ross 308 AP female is phenotypically a larger frame size bird. Because of this, in combination with a high egg output potential, results in a greater need for energy.
- This female is a keen eater and sufficient feeder space and higher feed volume in rear are recommended to maintain good uniformity and prevent abnormal behaviors.
- Egg size in the Ross 308 AP hen can be challenging to control late in lay and thus a 3-stage breeder feeding program is recommended.



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