Aviagen® Turkeys

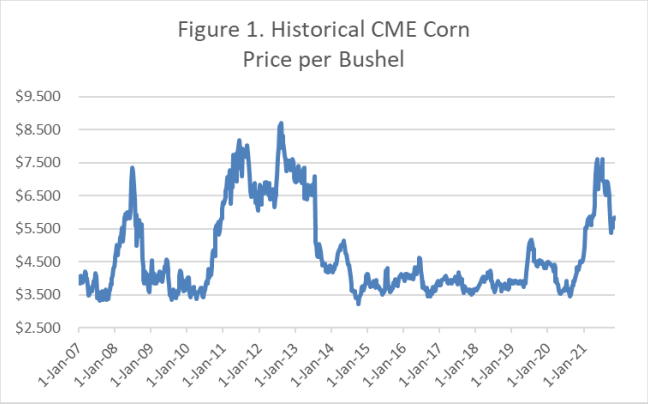
Bulletin

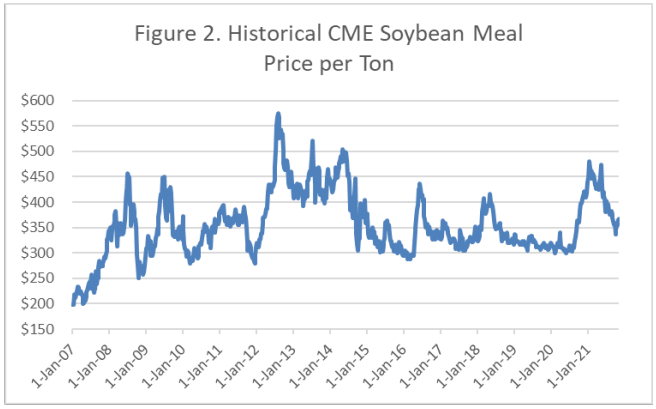
A technical publication from Aviagen Turkeys - USA

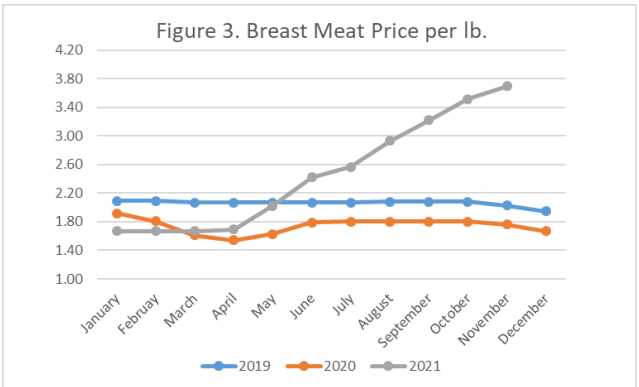
Issue 46

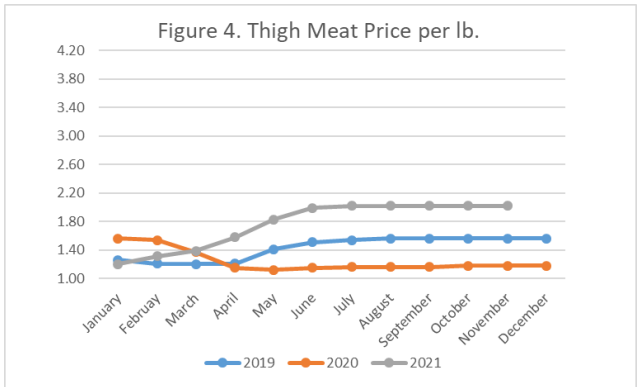
Feeding Turkeys for Meat Yield

Our industry, along with many others, has been highly impacted by labor shortages resulting in long delays in processing. In many cases toms have been processed as late as 25 weeks of age. This delay coincided with high grain prices (Figures 1 and 2) and until recently low meat prices which lasted two to three years (Figures 3 and 4). Therefore, it is not surprising that many companies chose to reduce production costs by decreasing the nutrient density of their diets. However, as Figure 3 shows we are seeing a rapid increase in breast meat prices while thigh meat price is good but flat. Based on the recent market changes, it is time to re-evaluate the economics of our feeding programs to capitalize on these high breast meat prices even though we all know it takes a long time to see the impact of any change.









Feeding to maximize the genetic potential for breast meat is always dynamic. While dark meat prices may increase, the white meat has the highest revenue potential and therefore it is important that we focus our feeding programs to maximize breast meat yield (Figure 5). It is always a balancing act to manage the input cost of the feeding program and nutrient content with the revenue of the various parts of the turkey carcass. Regardless of the circumstances, we must always be fully aware of the impact of nutritional changes on performance and yield. In general, the amino acid requirement for lysine is higher if maximum breast meat yield is the primary objective versus feed conversion and weight.

Recently Aviagen Turkeys conducted a pen trial to investigate the impact of high nutrient density diets (higher protein and amino acids) with equal energy levels. There were 6 replications per treatment and 20 toms per replication. Turkeys were processed at 19 weeks of age. The nutrient levels and cost for the ingredients (no milling cost) are shown in Table 1.

Figure 5. Turkey Meat Parts Revenue Percentage

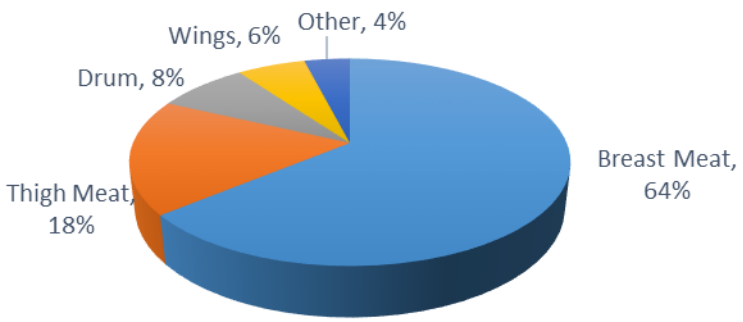


Table 1. Feeding Program and Nutrient Levels

	Pre-Starter		Starter		Grower 1		Grower 2		Finisher 1		Finisher 2	
	Control	High Density	Control	High Density	Control	High Density	Control	High Density	Control	High Density	Control	High Density
Cost, USD per ton for ingredients	$308.77	$327.97	$304.66	$322.32	$290.63	$307.40	$272.48	$286.81	$268.04	$280.20	$261.19	$271.22
Age fed, weeks	0 to 3	0 to 3	3 to 6	3 to 6	6 to 9	6 to 9	9 to 12	9 to 12	12 to 15	12 to 15	15 to 19	15 to 19
Protein, %	29.65	32.34	28.58	31.29	26.65	29.04	22.80	24.85	20.13	22.00	19.72	21.14
ME, Kcal / lb.	1403	1403	1421	1421	1434	1434	1474	1474	1543	1543	1533	1533
Total fat, %	9.38	9.95	9.68	10.39	10.08	10.60	10.33	10.78	11.64	12.14	11.07	11.42
DG Lysine, %	1.75	1.93	1.66	1.83	1.52	1.67	1.27	1.40	1.10	1.21	1.03	1.13
DG Methionine, %	0.79	0.88	0.76	0.84	0.71	0.78	0.59	0.66	0.53	0.59	0.52	0.58
DG M+C, %	1.14	1.25	1.10	1.21	1.02	1.12	0.86	0.95	0.77	0.85	0.76	0.84
DG Threonine, %	1.21	1.32	1.17	1.28	1.09	1.20	0.93	1.02	0.83	0.91	0.78	0.85
CALCIUM, %	1.70	1.70	1.61	1.61	1.56	1.56	1.43	1.43	1.18	1.18	1.13	1.13
Available Phosphorus, %	0.71	0.71	0.69	0.69	0.67	0.67	0.62	0.62	0.52	0.52	0.48	0.48

Increasing the nutrient density of the diet did not have a signifiant impact on weight or feed conversion (Table 2). Without looking at yield the lack of weight and feed conversion responses to higher amino acid levels does not justify the additional cost of the diets. In most cases and experiments the analysis would stop here and assume the investment is not economical. But we are in the business of meat and not only live weight.

Carcass cutup data is shown in Table 3. The high density diets resulted in a significant increase in the overall carcass without giblets (CWOG) yield as well as Breast meat yield, see Figure 6. These was a decrease in the dark meat yields, but as noted previously, the white meat has more revenue potential from each bird.

Table 2. Impact of Diet Density on Weight and Feed Conversion of Toms

	Live Weight, lbs.	Live Weight, Kgs	Gross FCR
Control	47.37	21.49	2.186
High density	47.78	21.67	2.214
	NS	NS	NS

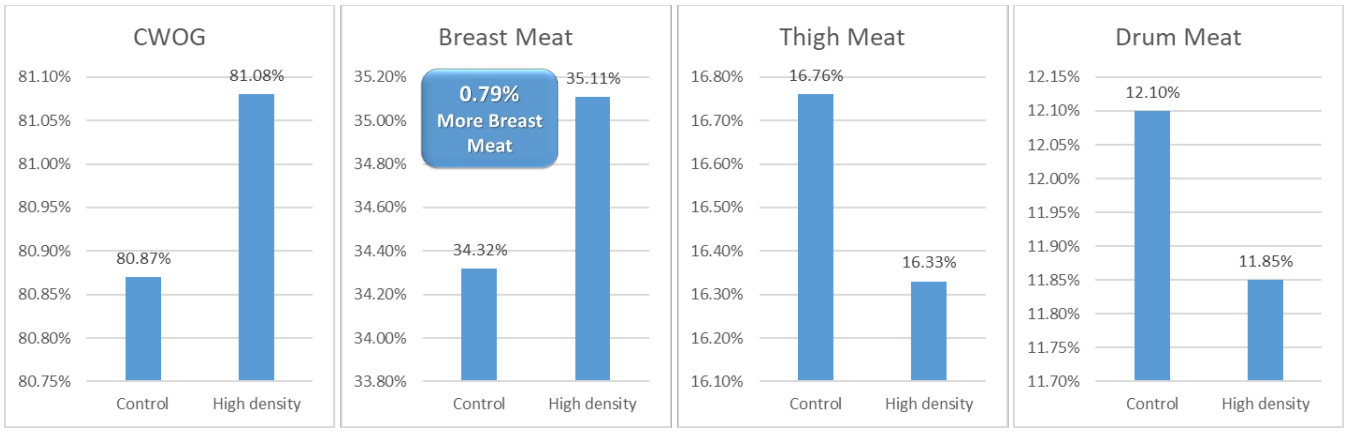
NS = not significant; S = Significant difference

Table 3. Impact of Diet Density on Carcass Yield Percentages

	CWOG	Breast Meat	Thigh Meat	Drum Meat	Wings	Back	TAG	Frame	Skin
Control	80.87	34.31	16.76	12.1	10.05	6.51	5.99	11.81	6.01
High density	81.08	35.11	16.33	11.85	9.86	6.43	6.23	11.78	6.03
	S	S	S	S	NS	NS	NS	NS	NS

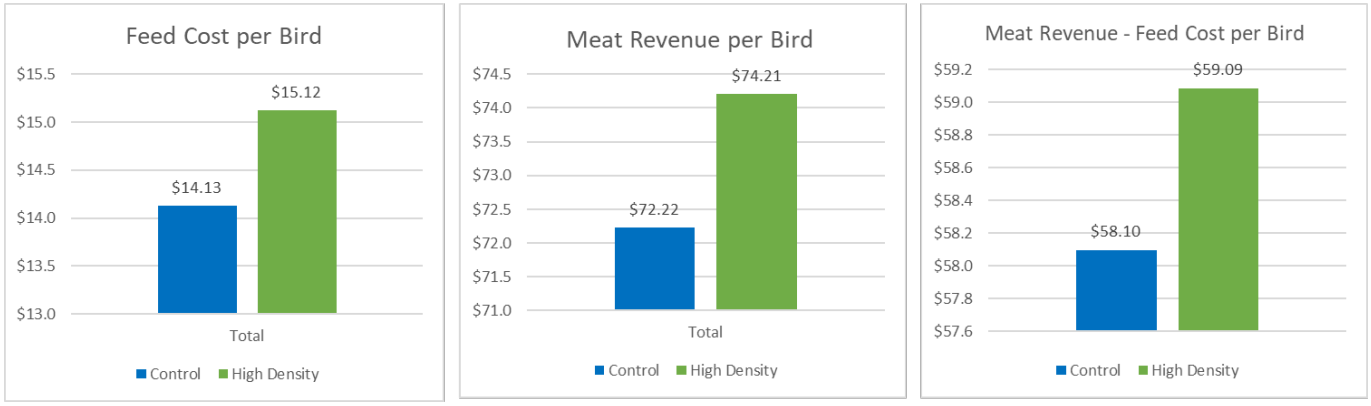
NS = not significant; S = Significant difference

Figure 6. Significant Differences in Meat Yield



Let's look at the numbers, Figure 7. Feeding the high nutrient density increased the feed cost per tom by one dollar. However, using the September 2021 meat prices (Total breast meat $3.23, thigh meat $2.02, drum meat $1.15, wing meat, $1.22, and scapula $1.86) the revenue from one carcass showed that meat revenue was $1.99 better for the high density diet versus the control diet. This does not take into consideration increased plant efficiency. In this experiment the financial benefit was an additional $1 in revenue per tom. It should also be noted that toms were processed at 19 weeks of age rather than 20 or 21 weeks of age where meat yield could improve significantly and result in improved financial returns.

Figure 7. Financial Impact of Diet Density



The situation gets more complex when independent growers are paid for live weight rather than meat yield and as mentioned above, considering only live performance would result in a different economical conclusion that would not have the positive impact on the processing plant. This is an area that our industry must re-evaluate considering the investment in the processing plants which is the core business of our industry. Using today's meat prices and based on the data generated from the recent trial, it is clear that there is good return for increasing the nutrient density of the diets for toms.

Summary

The question about the impact of diet density on live performance and the meat yield of various parts has been dynamic for many years and will continue to be the case. On average it takes 19 to 21 weeks to grow a tom. During such a period, the value for breast meat could go up or down so the decision on investing in the diet density is not simple. However, plant efficiency and meat output must be included as part of the nutrition strategy because it can have a tremendous impact on the bottom line.