

TURKEY BREEDER NUTRITION

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NEST EGG NUTRITION

INTRODUCTION

The turkey, as we know it today, is quite different from the original model. The North American wild turkey was transported from Mexico to Spain during the early part of the 15th century. From Spain the turkey spread across the other European countries. By the start of the 16th century farmers were raising turkeys for income. Around 1830 farmers began to cross turkey lines from other geographic regions and saw improvement in growth rate. During the 1930's and 1940's interest in crossing lines of turkeys was widespread in the United States. California was among the leading states in turkey breeding by 1950. There were dozens of lines or strains of turkey during the 1950's and 1960's. Today, North America has four primary turkey breeders. Two of these breeders, Nicholas Turkey Breeding Farms and Orlopp Turkey Breeding Farms, are located in California. British United Turkeys of America (BUTA) and Hybrid Turkey are the other two companies. Nicholas, BUTA and Hybrid produce the vast majority of commercial turkeys.

GENETICS AND THE TURKEY MARKET

Thirty years ago, turkeys grew at a rate of about one pound per week. The growth rate today is double that of thirty years ago and each year continues a slight increase. The turkey industry still has the need to produce the whole body turkey for holiday markets but an ever-increasing poundage of turkey meat is marketed as cut up or further processed product. Heavy body weights are the answer to efficient processing plant operation and increased breast meat yield. White meat is the premium product for the U.S. market. The primary breeders have followed the demands of the commercial turkey production companies for fast growing turkeys. Since all of the genetics companies compete for the same market, it is little wonder that the difference between breeds grown today is very subtle. The Orlopp turkey is a slower growing turkey with very good skeletal properties. The regional markets for the Orlopp line are found primarily in Utah and sections of Mexico. The other three lines compete for the major portion of the world market. Turkeys from these lines will be marketed in the weight range of 17 to 20 kilograms.

GENETICS AND THE TURKEY BREEDING HEN

In very recent years, much of the weight for age improvement of the commercial turkey has come from the female lines. The result is a body weight increase in our breeder hens. Generally, larger hens lay fewer eggs and have higher mortality due to prolapse. Our job now as nutritionist and breeder flock managers is to limit body weights at the time of light stimulation. Perhaps lighting at 28 weeks is part of the answer. Certainly producing diets with low fat inclusions helps. In some cases, in cold climates, feed restriction may need to be employed. The cold facts are that 29 pound breeder hens at lighting do not perform well and our flocks have that potential.

TURKEY BREEDER NUTRITION

An admonition, monitor hen body weights throughout the growing period. Environmental temperature changes will have a great affect on your success of failure to achieve the desired hen weights at lighting. One feeding program will not work for all companies or for all seasons. The nutrient suggestions offered in this paper will work most of the year but extreme heat will force you to feed higher density diets.

Low energy ingredients have become a necessity for the formulation of hen turkey grower diets. Wheat bran, wheat millrun, soy hulls, alfalfa meal, safflower meal, sunflower meal and canola meal are good ingredients to choose from for reduced density grower series diets. Added fat levels need to be kept to the minimum needed for feed processing.

Vitamin and trace mineral levels for turkey breeder candidate and turkey breeder diets have not changed over the past two years. There is an interesting response to selenized yeast cultures. It does appear that these produces increase fertility and hatchability. This occurs even when compared to maximum supplementation with sodium selenite.

SUMMARY

The turkey breeder hen of today has a potential for growing to heavy body weights that will have an adverse affect on egg production and mortality rates. Our job is to manage the feeding program and the birds environment in order to reach a more productive body weight at lighting. "Managing" means we need to adjust our feeding programs and feeding methods from one location to another. The days of the 24 pound breeder hen are gone. A 26 to 27 pound target weight for breeder hens is a good range today.

FEEDING SCHEDULE
COOL CLIMATE TURKEY BREEDERS

DIET NAME	AGE TO FEED (DAYS)	POUNDS OF DIET	
		TOMS	HENS
PRESTARTER	0 - 13	1.1	1.0
STARTER 1	14 - 34	4.7	3.8
STARTER 2	35 - 62	15.0	9.6
GROWER 1	63 - 90	23.5	14.0
GROWER 2	91 - 133*		
DEVELOPER*	HENS AT 15 WEEKS OF AGE TO ONE WEEK PRIOR TO LIGHTING		
EARLY BREEDER	HENS FROM ONE WEEK PRIOR TO LIGHTING TO 45% EGG PRODUCTION POST PEAK		
LATE BREEDER	HENS AFTER EGG PRODUCTION FALLS BELOW 45%		
FULL FED TOM	FROM SELECTION TO MARKET		
*TOM SELECTION AT 18 WEEKS			

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Stored Formula Printout
NEST EGG NUTRITION

Page: 2
Date: 10-07-2002
Time: 07:49:27
LP #: 25222

Plant: TUR
Formula Code : C42 1 BREEDER STARTER #2
Date Stored : 10-07-2002 Species: 3

Ingredient Code	Ingredient Name	Amount
9	SOY HULLS	45.0000
51	FAT-BLENDED 3700	5.0000
105	CORN - GROUND	1103.5000
360	SOYBEAN MEAL 47.5%	735.0000
408	COPPER SULFATE 25%	1.0000
417	LIMESTONE MEAL	35.0000
440	LYSINE L 78.4%	4.0000
442	METHIONINE HYDROXY ANALOG LIQUID	3.5000
444	MONO-DICAL PHOSPHATE	57.0000
450	SALT	6.0000
693	TURKEY VITAMIN PMX	2.0000
700	TRACE MINERAL PMX	1.0000
821	AMPROLIUM 25%	1.0000
824	BACITRACIN MD 50GM	1.0000

Totals for batch: 2000.0000

Nut. No.	Nutrient Name	Units	Amount
1	WEIGHT	LBS	1.0000
2	MET ENERGY POULTRY	CAL/LB	1292.8740
10	CRUDE PROTEIN	PCT	22.3325
13	ARGININE	PCT	1.5075
14	LYSINE	PCT	1.4471
15	METHIONINE	PCT	0.5385
16	METH & CYSTIN	PCT	0.9184
17	TRYPTOPHANE	PCT	0.3350
26	CRUDE FAT	PCT	2.9982
27	CRUDE FIBER	PCT	3.3246
28	DRY MATTER	PCT	87.7958
29	ASH	PCT	7.2542
30	CALCIUM (Ca)	PCT	1.2609
31	PHOSPHORUS-AV	PCT	0.7246
32	PHOSPHORUS (P)	PCT	0.9897
33	SALT (NaCl)	PCT	0.3000
34	SODIUM	PCT	0.1583
35	POTASSIUM	PCT	0.8908
42	XANTHOPHYLL	MG/LB	5.5175
60	CHLORIDE	PCT	0.2251
75	ADDED MINERAL	PCT	4.9830

Stored Formula Printout
NEST EGG NUTRITION

Page: 3
Date: 10-07-2002
Time: 07:49:27
LP #: %25223

Plant: TUR
Formula Code : C43 1 BREEDER GROWER #1
Date Stored : 10-07-2002 Species: 3

Ingredient Code	Ingredient Name	Amount
9	SOY HULLS	60.0000
51	FAT-BLENDED 3700	10.0000
105	CORN - GROUND	1220.1000
360	SOYBEAN MEAL 47.5%	600.0000
408	COPPER SULFATE 25%	1.0000
417	LIMESTONE MEAL	40.0000
440	LYSINE L 78.4%	2.5000
442	METHIONINE HYDROXY ANALOG LIQUID	2.9000
444	MONO-DICAL PHOSPHATE	54.0000
450	SALT	6.0000
693	TURKEY VITAMIN PMX	1.5000
700	TRACE MINERAL PMX	1.0000
821	AMPROLIUM 25%	1.0000

Totals for batch: 2000.0000

Nut. No.	Nutrient Name	Units	Amount
1	WEIGHT	LBS	1.0000
2	MET ENERGY POULTRY	CAL/LB	1319.2881
10	CRUDE PROTEIN	PCT	19.6122
13	ARGININE	PCT	1.2985
14	LYSINE	PCT	1.1993
15	METHIONINE	PCT	0.4739
16	METH & CYSTIN	PCT	0.8185
17	TRYPTOPHANE	PCT	0.2923
26	CRUDE FAT	PCT	3.4212
27	CRUDE FIBER	PCT	3.5361
28	DRY MATTER	PCT	87.8473
29	ASH	PCT	7.0971
30	CALCIUM (Ca)	PCT	1.3114
31	PHOSPHORUS-AV	PCT	0.6833
32	PHOSPHORUS (P)	PCT	0.9312
33	SALT (NaCl)	PCT	0.3000
34	SODIUM	PCT	0.1579
35	POTASSIUM	PCT	0.7890
42	XANTHOPHYLL	MG/LB	6.1005
60	CHLORIDE	PCT	0.2246
75	ADDED MINERAL	PCT	5.0830

Stored Formula Printout
 NEST EGG NUTRITION

Page: 4
 Date: 10-07-2002
 Time: 07:49:27
 LP #: %25224

Plant: TUR
 Formula Code : C44 1 BREEDER GROWER #2
 Date Stored : 10-07-2002 Species: 3

Ingredient Code	Ingredient Name	Amount
9	SOY HULLS	100.0000
51	FAT-BLENDED 3700	10.0000
105	CORN - GROUND	1442.7000
360	SOYBEAN MEAL 47.5%	355.0000
408	COPPER SULFATE 25%	1.0000
417	LIMESTONE MEAL	30.0000
440	LYSINE L 78.4%	1.3000
442	METHIONINE HYDROXY ANALOG LIQUID	2.0000
444	MONO-DICAL PHOSPHATE	50.0000
450	SALT	5.0000
530	SODIUM BICARB	0.5000
693	TURKEY VITAMIN PMX	1.5000
700	TRACE MINERAL PMX	1.0000

Totals for batch: 2000.0000

Nut. No.	Nutrient Name	Units	Amount
1	WEIGHT	LBS	1.0000
2	MET ENERGY POULTRY	CAL/LB	1361.8105
10	CRUDE PROTEIN	PCT	14.8688
13	ARGININE	PCT	0.9261
14	LYSINE	PCT	0.8158
15	METHIONINE	PCT	0.3672
16	METH & CYSTIN	PCT	0.6503
17	TRYPTOPHANE	PCT	0.2172
26	CRUDE FAT	PCT	3.7705
27	CRUDE FIBER	PCT	4.1580
28	DRY MATTER	PCT	87.7679
29	ASH	PCT	5.9429
30	CALCIUM (Ca)	PCT	1.0615
31	PHOSPHORUS-AV	PCT	0.6243
32	PHOSPHORUS (P)	PCT	0.8426
33	SALT (NaCl)	PCT	0.2500
34	SODIUM	PCT	0.1444
35	POTASSIUM	PCT	0.6137
42	XANTHOPHYLL	MG/LB	7.2135
60	CHLORIDE	PCT	0.1925
75	ADDED MINERAL	PCT	4.3330

Stored Formula Printout
NEST EGG NUTRITION

Page: 5
Date: 10-07-2002
Time: 07:49:27
LP #: %25225

Plant: TUR
Formula Code : C45
Date Stored : 10-07-2002
1 BREEDER DEVELOPER (HOLDING)
Species: 3

Ingredient Code	Ingredient Name	Amount
9	SOY HULLS	400.0000
51	FAT-BLENDED 3700	10.0000
105	CORN - GROUND	1450.5000
360	SOYBEAN MEAL 47.5%	75.0000
408	COPPER SULFATE 25%	1.0000
417	LIMESTONE MEAL	25.0000
444	MONO-DICAL PHOSPHATE	31.0000
450	SALT	5.0000
693	TURKEY VITAMIN PMX	1.5000
700	TRACE MINERAL PMX	1.0000

Totals for batch: 2000.0000

Nut. No.	Nutrient Name	Units	Amount
1	WEIGHT	LBS	1.0000
2	MET ENERGY POULTRY	CAL/LB	1275.1375
10	CRUDE PROTEIN	PCT	10.0033
13	ARGININE	PCT	0.5516
14	LYSINE	PCT	0.4563
15	METHIONINE	PCT	0.2019
16	METH & CYSTIN	PCT	0.4180
17	TRYPTOPHANE	PCT	0.1590
26	CRUDE FAT	PCT	3.9185
27	CRUDE FIBER	PCT	8.9982
28	DRY MATTER	PCT	88.0918
29	ASH	PCT	4.8109
30	CALCIUM (Ca)	PCT	0.8413
31	PHOSPHORUS-AV	PCT	0.4018
32	PHOSPHORUS (P)	PCT	0.5757
33	SALT (NaCl)	PCT	0.2500
34	SODIUM	PCT	0.1330
35	POTASSIUM	PCT	0.5288
42	XANTHOPHYLL	MG/LB	7.2525
60	CHLORIDE	PCT	0.1894
75	ADDED MINERAL	PCT	3.1330