



The Poultry Informed Professional

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 Editor: Charles Hofacre, Associate Professor, Department of Avian Medicine

Phone (706) 542-1904 Fax (706) 542-5630
 e-mail: sclanton@arches.uga.edu

Body Weight Management and Reproductive Performance of Broiler Breeder Males

This information was provided by Dr. Wallace Berry of the Auburn University Poultry Science Department

Reproduced with permission from "Current Concepts in Broiler Production", Fall 2000.

Control of broiler breeder growth during rearing and production is necessary to obtain acceptable reproductive performance. This is achieved through restricted feeding programs and manipulation of nutrients. Such feeding programs, although essential for good performance, are complex and require intensive management. Body weight must be frequently and carefully monitored and feed amounts accurately estimated to meet the desired growth target. One very serious danger is the underestimation of feed allotments, which can halt growth or even cause males to lose weight. This permanently damages fertility. In an effort to avoid this, males are often allowed to become overweight. However, overweight breeders have problems with livability and mating ability. Also, once the males get too heavy, it is difficult to bring them back to the desired range without

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Broiler Performance Data (Region) Live Production Cost					
	SW	Midwest	Southeast	Mid-Atlantic	S-Central
Feed cost/ton w/o color (\$)	127.16	114.97	128.66	129.28	129.40
Feed cost/lb meat (¢)	11.67	10.89	12.10	12.64	11.96
Days to 4.6 lbs	44	45	44	44	43
Med. cost/ton (¢)	2.76	1.62	2.98	2.76	2.85
Chick cost/lb (¢)	4.05	3.81	3.98	3.67	3.81
Vac-Med cost/lb (¢)	0.05	0.04	0.10	0.04	0.09
WB & 1/2 parts condemn. cost/lb	0.23	0.18	0.22	0.21	0.19
% mortality	4.13	3.10	3.61	4.10	4.51
Sq. Ft. @ placement	0.81	0.78	0.80	0.81	0.84
Lbs./Sq. Ft.	6.03	6.61	6.33	6.93	6.47
Down time (days)	18	17	20	18	21

Data for week ending 11/25/00

Body Weight Management...

Continued from Page 1

irreversibly damaging fertility. One possible strategy to reduce these risks is to restrict growth early to intentionally keep the birds below the usual body weight targets. While still allowing growth, this would provide a "buffer zone" in which estimations of feed amounts could err on the side of additional growth. This would provide an increased margin of error between actual growth and the desired growth targets. While this strategy would not reduce the need for careful management of the feeding program, it should reduce the risks associated with overfeeding and males becoming overweight.

To test this strategy, breeder males were initially fed to produce a group of "Small" males whose body weights were kept below the primary breeder company guidelines. Another group of males was fed to produce "Large" males whose body weights were above breeder guidelines. These birds were managed so that their body weights continued to diverge through week 21, while maintaining positive growth rates in both groups.

Male breeder chicks were brooded in a light-controlled poultry house under commercial management conditions. Photoperiod was 22 hours per day until the chicks were 3 weeks of age, then 8 hours daily through 20 weeks of age. Water was provided continuously. Chicks designated to be in the "Small" group were full-fed standard 22% broiler starter until they reached 1.2 pounds average body weight. Chicks destined to be in the "Large" group were full-fed the broiler starter until they reached 1.9 pounds body weight. When the chicks in each group reached their target body weights, they were switched to a 12% protein-rearing diet and were fed on a "skip-a-day" program until they reached 20 weeks of age. Small males were fed approximately 20% less feed than recommended in the primary breeder company guidelines. Large males were fed according to the primary breeder guidelines until 9 weeks old, after which they received approximately 20% more feed than the primary breeder recommendations, with weekly modifications to the feed allotments to maintain divergence of body weights.

At 20 weeks of age, the male birds were placed with females in a curtain-sided, slat-litter breeder house divided into individual pens. The ratio of females to males was 10 to 1. Males in the Small and Large groups were fed a 12% protein breeder diet in amounts estimated to maintain the difference in weight, while still allowing growth. At 21 weeks of age, the lighting schedule was arranged to provide 14 hours of light with an increase of 15 minutes of light each week to a maximum of 16 hours of light. Unfit male and female birds were continually culled, with culls and mortalities replaced immediately. Body weights were measured every 4 weeks. Weekly fertility was monitored by breakout of eggs following 7 days of incubation. Every fourth week eggs were set for incubation through hatching to determine hatchability and embryonic mortality patterns.

The primary breeder guideline specified a male weight of 1 lb. at 3 weeks, 6.7 lbs. at photostimulation (21 weeks), 8.85 lbs. at peak production (31-32 weeks) and 9.4 lbs. at 45 weeks. In this study, small males averaged 1.25 lbs. at week 3, 5.5 lbs. at photostimulation, 8.5 lbs. at peak, and 9.75 lbs. at week 45. The week 45 weight of the small males was actually higher than guideline target weights, reflecting a growth rate higher than guideline rates during the production phase. Large males were 1.9 lbs. at 3 weeks, 7 lbs. at photostimulation, 9.75 lbs. at peak, and 11.2 lbs. at week 45. Body weight uniformity at 21 weeks of age was 84% for the small males and 85% for the large males. Small males suffered less culling and mortality than large males (22% vs 30%). This was apparently due to reduced leg problems in the small males.

Small males gave consistently higher fertility than the large males. Small males gave an overall mean fertility rate of 97.75% as compared to 96.6% for the large males. However, the greatest differences occurred before and after peak production. Differences in embryonic mortality were slight with small males giving lower early embryonic mortality (3.3% vs 3.4%) but higher late embryonic mortality (4.6% vs 4.3%) as compared to large males. These differences in embryonic mortality resulted in the Small male group having an overall lower hatch of fertile eggs (89.5% vs 90.25%). However, the greater fertility rate of the Small males groups resulted in 3 more chicks per 1000 eggs set.

The results of this study indicate that heavy breeder males can be maintained at body weights below guideline recommendations, but with continued growth, up to peak production without adversely affecting fertility and hatchability. In fact, males maintained in this manner produced more chicks on a small feed allotment than males maintained at weights that, although higher than the primary breeding company guidelines, were typically of those seen in commercial production.

Excerpts from the latest USDA National Agricultural Statistics Service (NASS) "Broiler Hatchery," "Chicken and Eggs" and "Turkey Hatchery" Reports and Economic Research Service (ERS) "Livestock, Dairy and Poultry Situation and Outlook" Reports

Broiler Eggs Set In 15 Selected States Down Slightly

According to the most recent National Agricultural Statistics Service (NASS) report, commercial hatcheries in the 15-State weekly program set in incubators 180 million eggs during the week ending November 25, 2000. This was down slightly from the eggs set the corresponding week a year earlier. Average hatchability for chicks hatched during the week was 82 percent. Average hatchability is calculated by dividing chicks hatched during the week by eggs set three weeks earlier.

Broiler Chicks Placed Down 3 Percent

Broiler growers in the 15-State weekly program placed 134 million chicks for meat production during the week ending November 25, 2000. Placements were down 3 percent from the comparable week in 1999. Cumulative placements from January 2, 2000, through November 25, 2000, were 6.76 billion, up 1 percent from the same period a year earlier.

Turkey Eggs in Incubators on November 1 Up Slightly From Last Year

Turkey eggs in incubators on November 1, 2000, in the United States totaled 29.2 million, up slightly from November 1 a year ago. Eggs in incubators were down 1 percent from the October 1 total of 29.5 million. Regional changes from the previous year were: East North Central, up 4 percent; West North Central, up 5 percent; North and South Atlantic, down 5 percent; South Central, down 10 percent; and West, up 9 percent.

Poults Placed During October Up 6 Percent From Last Year

The 23.7 million poults placed during October 2000 in the United States were up 6 percent from the number placed during the same month a year ago. Placements were up 3 percent from the September total of 23.0 million. Regional changes from the previous year were: East North Central, up slightly; West North Central, up 1 percent; North and South Atlantic, up 14 percent; South Central, down 1 percent; and West, up 23 percent.

October Egg Production Down Slightly

U.S. egg production totaled 7.11 billion during October 2000, down slightly from the 7.13 billion produced in 1999. Production included 6.04 billion table eggs and 1.07 billion hatching eggs, of which 1.01 billion were broiler-type and 60.0 million were egg-type. The total number of layers during October 2000 averaged 327 million, up 1 percent from the total average number of layers during October 1999. October egg production per 100 layers was 2,172 eggs, down 1 percent from 2,192 eggs in October 1999.

All layers in the U.S. on November 1, 2000, totaled 328 million, up slightly from a year ago. The 328 million layers consisted of 272 million layers producing table or commercial type eggs, 53.7 million layers producing broiler-type hatching eggs, and 2.51 million layers producing egg-type hatching eggs. Rate of lay per day on November 1, 2000, averaged 70.3 eggs per 100 layers, down 1 percent from the 70.7 eggs a year ago.

Laying flocks in the 30 major egg producing States produced 6.66 billion eggs during October, down 1 percent from October 1999. The average number of layers during October, at 307 million, was up slightly from a year earlier.

Egg-Type Chicks Hatched Down 10 Percent

Egg-type chicks hatched during October totaled 35.2 million, down 10 percent from October 1999. Eggs in incubators totaled 29 million on November 1, 2000, down 8 percent from a year ago.

Domestic placements of egg-type pullet chicks for future hatchery supply flocks by leading breeders totaled 283,000 during October 2000, up 2 percent from October 1999.

Broiler Hatch Up 2 Percent

The October 2000 hatch of broiler-type chicks, at 711 million, was up 2 percent from October of the previous year. There were 563 million eggs in incubators on November 1, 2000, down 2 percent from a year earlier.

Leading breeders placed 6.69 million broiler-type pullet chicks for future domestic hatchery supply flocks during October 2000, down 6 percent from October 1999.

Broiler Output Slows in Third Quarter, Exports Higher

According to the most recent Economic Research Service (ERS) reports, broiler production in third-quarter 2000 was 7.5 billion pounds, only 0.2 percent higher than a year earlier. Over the first 9 months of 2000 broiler production has totaled 22.9 billion pounds, 2 percent higher than for the same period in 1999. Production has continued to slow during 2000 in response to low prices earlier this year. Production for 2000 is now estimated at 30.4 billion pounds, 2 percent more than in 1999. Over the first half of fourth-quarter 2000, placements of broiler chicks have been averaging about 1.5 percent higher than the previous year. This increase in broiler chick placements is expected to push production in fourth-quarter 2000 to 7.55 billion pounds, an increase of 2.5 percent from a year earlier.

While the pace of domestic broiler production has been slowing, exports have been considerably stronger in 2000 than in 1999. This combination of events has led to lower cold storage stocks of broilers, (whole and parts), which were down 7 percent at the end of October compared with a year earlier. The slowing of production growth and higher exports is also expected to gradually strengthen prices for whole birds and dark meat parts.

Broiler exports in September were estimated at 445 million pounds, making total third-quarter exports 1.382 billion pounds, an increase of 10 percent from the previous year. However, in 2000, third-quarter shipments were totally commercial, but shipments in the third and fourth quarters of 1999 contained both commercial sales and food aid shipments to Russia. For 2000, total broiler exports are forecast at 5.4 billion pounds, 10 percent higher than in 1999. Exports to Russia continue to rebound strongly. Over the first 9 months of 2000, shipments to Russia (and the Baltic countries) have totaled 1.311 billion, 12 percent higher than a year earlier. Shipments to Hong Kong/China (our second largest market) have totaled 1.2 billion, an increase of 22 percent. This increase comes on top of a 25-percent increase in shipments to Hong Kong/China in 1999.

Turkey Production Declines

Federally inspected turkey production for third-quarter 2000 totaled 1.331 billion pounds, 2.3 percent lower than third-quarter 1999. Over the first 9 months of 2000, production has been 4.0 billion pounds, up 2.7 percent from the same period in 1999. Whole bird stocks at the end of October were 305 million pounds, down 4 percent from a year earlier. Exports of turkey and turkey products were higher than earlier anticipated. Third quarter 2000 exports totaled 102 million pounds, 10 percent higher than third-quarter 1999.

The lower production, combined with lower stocks for whole birds, is expected to lend some strength to prices in the whole bird market through the end of the year. While the three-region price for whole birds has risen seasonally, the average price in September and October 2000 have been almost identical to those of the previous year. Presently, fourth-quarter wholesale prices for hens in the Eastern region are expected to average around 78 cents a pound, only a cent higher than in fourth-quarter 1999.

Turkey exports for 2000 are forecast at 416 million pounds, a 10-percent increase from the previous year. However, much of the increase came in the first quarter, when exports were 50 percent higher than the previous year. In September, turkey exports totaled 41 million pounds, up 19 percent from September 1999. Turkey exports to Mexico, Russia, and China/Hong Kong have all increased so far in 2000. However, exports to Mexico (our largest market) may slow in the fourth quarter, as Mexican pork producers are attempting to have the government collect higher duties on over-tariff rate quota turkey imports. While Mexico, according to trade agreements, has been able to assess higher duties on over-tariff imports of turkey, they have chosen not to apply these higher duties in the past. Mexican meat producers have argued that low-cost turkey meat imports were needed for processed meat (mostly sausage) production.

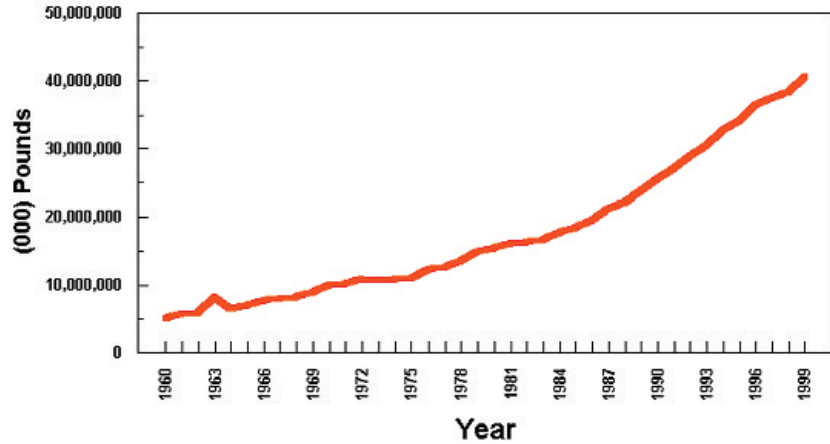
Production Growth from Table Eggs

Total egg production for 2000 is estimated at 7.038 billion dozen, 1.8 percent higher than in 1999. All of the growth in egg production has come from table eggs, as hatching egg production in 2000 is virtually the same as in 1999. Table egg production is expected to total 5.96 billion dozen in 2000, up 2.1 percent from 1999.

The higher table egg production, combined with only a small increase in egg exports, means that more eggs will be available for domestic egg consumption. In 2000, per capita egg consumption is estimated at 258.7 eggs, approximately 3 eggs per capita higher than in 1999. Growth in the breaking egg market is expected to account for most of the increase in consumption. The total number of eggs entering the breaking egg market in 2000 is estimated at 1.84 billion dozen, up 4.7 percent from the previous year. The number of eggs entering the breaking egg market has risen in each of the last 6 years.

BROILERS POUNDS PRODUCED, 1960-1999

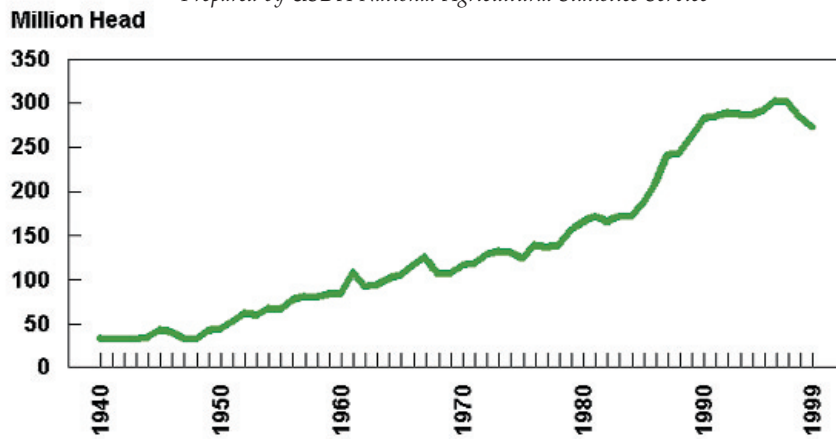
Prepared by USDA-National Agricultural Statistics Service



**USDA-NASS
04/28/99**

U.S. Turkey Production 1940-1999

Prepared by USDA-National Agricultural Statistics Service

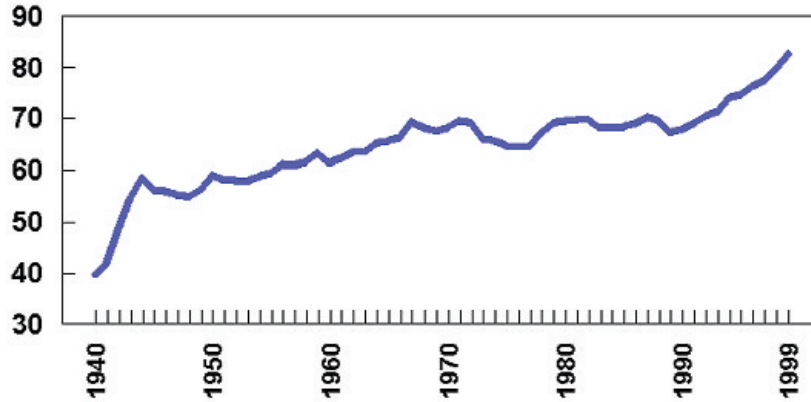


**USDA-NASS
04/28/00**

U.S. Egg Production 1940-1999

Prepared by USDA-National Agricultural Statistics Service

Billion Eggs



USDA-NASS
04/28/00

Broiler Performance Data (Company) Live Production Cost

	Average Co.	Top 25%	Top 5 Cos.
Feed cost/ton w/o color (\$)	128.11	122.06	117.10
Feed cost/lb meat (¢)	11.98	11.44	11.16
Days to 4.6 lbs	44	44	45
Med. cost/ton (¢)	2.75	1.99	1.53
Chick cost/lb (¢)	3.99	3.58	3.08
Vac-Med cost/lb (¢)	0.07	0.03	0.03
WB & 1/2 parts condemn. cost/lb	0.21	0.16	0.13
% mortality	3.95	3.71	2.89
Sq. Ft. @ placement	0.81	0.80	0.83
Lbs./Sq. Ft.	6.35	6.60	7.11
Down time (days)	19	19	18

Data for week ending 11/25/00

Broiler Whole Bird Condemnation (Region)

	SW	Mid-West	S. East	Mid-Atlantic	S. Central
% Septox	0.319	0.365	0.261	0.338	0.256
% Airsac	0.095	0.062	0.204	0.114	0.085
% I.P.	0.074	0.058	0.085	0.077	0.132
% Leukosis	0.004	0.001	0.003	0.007	0.002
% Bruise	0.009	0.007	0.021	0.014	0.014
% Other	0.027	0.006	0.016	0.014	0.008
% Total	0.528	0.500	0.589	0.564	0.507
% 1/2 parts condemnations	0.452	0.290	0.339	0.317	0.325

Data for week ending 11/25/00

Broiler Whole Bird Condemnation (Company)

	Average Co.	Top 25%	Top 5 Co.'s
% Septox	0.315	0.266	0.291
% Airsac	0.120	0.072	0.058
% I.P.	0.089	0.039	0.022
% Leukosis	0.004	0.004	0.002
% Bruise	0.014	0.009	0.007
% Other	0.014	0.007	0.002
% Total	0.555	0.397	0.382
% 1/2 parts condemnations	0.363	0.347	0.215

Data for week ending 11/25/00



The University of Georgia is committed to the principle of affirmative action and shall not discriminate against otherwise qualified persons on the basis of race, color, religion, national origin, sex, age, physical or mental handicap, disability, or veteran's status in its recruitment, admissions, employment, facility and program accessibility, or services.

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Meetings, Seminars and Conventions

2001 January

Jan. 7-9: 2001 National Turkey Federation Annual Convention, Westin Hotel, Long Beach, Calif. Details from Cherie Proctor, Phone: 202-898-0100, ext. 229; Fax: 202-898-0203; E-mail: cproctor@turkeyfed.org; Internet www.eatturkey.com

Jan. 15-16: International Poultry Scientific Forum, Southern Conference on Avian Diseases, Georgia World Congress Center, Atlanta, GA. Contact: U.S. Poultry & Egg Assoc., 1530 Cooledge Road, Tucker, Georgia 30084-7303, Phone: 770-493-9401.

Jan. 17-19: 2001 International Poultry Exposition, Georgia World Congress Centre, Atlanta, Georgia, USA. Contact: US Poultry & Egg Association, 1530 Cooledge Road, Tucker, Georgia 30084, USA. Fax: +1 770-493-9257.

2001 February

Feb. 7-9: Australian Poultry Science Symposium, Sydney, NSW Australia. Contact: Dr. D. Balnave, Dept. of Animal Science, University of Sydney, Camden, NSW 2750 Australia. Phone +61 2 4655 0677; fax: +61 2 4655 0693; E-mail: derickb@camden.nsyd.edu.au

Feb. 11-16: 2nd International Poultry Broiler Nutritionists Conference, Rutorua, New Zealand. Contact: Bob Diprose, Executive Director, Poultry Industry Association, 96D Carlton Gore Road, Auckland, New Zealand.

Phone: +64 9 520 4300; Fax: +64 9 520 1533

Feb. 23-24: APF Spring Meeting, Arlington Hotel, Hot Springs, Ark. Contact: Judy Kimbrell, Poultry Federation, P.O. Box 1446, Little Rock, Ark. 72203. Phone: 501-375-8131.

Feb. 26-28: Food Irradiation Conference, Washington, D.C. Details from Janine Scheld, Conference Director, Intertech, 19 Northbrook Drive, Portland, Maine 04105. Phone: 207-781-9617; Fax: 207-781-2150; E-mail jscheld@interechusa.com

2001 March

March 14-15: MPF Convention, Touchstone Energy@Place, RiverCentre, St. Paul, Minn. Contact: Midwest Poultry Federation, 2380 Wycliff St., St. Paul, Minn. 44114-1257.

Phone: 651-464-4553.

March 14-16: VIV Asia, Queen Sirikit National Convention Center, Bangkok, Thailand. Contact: VIV Secretariat, Royal Netherlands Industries Fair, PO Box 8500 NL-3503 RM Utrecht, The Netherlands. Phone: +31 20 295 5662; Fax: +31 30 295 5709.

March 23-26: American College of Poultry Veterinarians Workshop and the 50th Western Poultry Disease Conference, University of California, Davis. Contact: Conferences & Event Services. Phone: 530-757-3331; Fax: 530-757-7943. Website: conferences.ucdavis.edu (click on Academic Conferences).

March 28-29: NPI Annual Convention, New World Inn, Hwy. 30 & 81 S., Columbus, Nebraska. contact: Nebraska Poultry Industries Inc., A103 Animal Sciences, University of Nebraska, P.O. Box 830908, Lincoln, Nebraska 68583-0908. Phone: 402-472-2051.

March 30-31: Florida Poultry Days, Orlando, Fla. Contact: Florida Poultry Federation, 4508 Oak Flair Blvd., Suite 290, Tampa, Fla. 33610. Phone: 813-628-4551.

2001 April

April 5-7: Chicken Cooking Contest, Hyatt Regency Hotel & Conference Center, Sacramento, Calif. Contact: National Chicken Council, 1015 15th St., N.W., Suite 930, Washington, D.C. 20005-2605. Phone: 202-296-2622.

April 6: AP&EA Processors Meeting, Auburn University. Contact: Alabama Poultry & Egg Association, P.O. Box 240, Montgomery, AL 36101. Phone: 334-265-2732.

April 11-13: Poultry Industry Conference & Exhibition, Western Fairgrounds, London, Ontario, Canada. Contact: WesternFair Association, P.O. box 7550, London ON N5Y 5PA. Phone 519-438-7203 x 222. Fax: 519-679-3124. E-mail: info@westernfair.com http://www.westernfair.com

April 17-18: Health & Management Seminar, Airport Clarion Hotel, Roanoke, VA. Contact: Rockingham Poultry Serviceman's Committee, Virginia Poultry Federation Inc., 333 Neff Ave., Suite C, Harrisonburg, VA 22801. Phone: 540-433-2451.

April 24-26: Victam Europe 2001 "The Global Event Supplying the Feed & Food Chain" Utrecht Trade Fair, Utrecht, The Netherlands. Contact:

Phone: +31 33 246 4404; Fax: +31 33246 4706 or Email expo@victam.com

April 24-26: Agro-Foodtech China 2001 International Exhibition for Agriculture, Animal Breeding and Food-Processing Industries in China, Contact: Florence Mouscadet. Phone: +33 149 685677; Fax: +33 149 685299.

April 25-27: 24th Technical Turkey Conference, Shrigley Hall Hotel near Macclesfield, UK. Contact: Fax: +44 1969 6637644 or

Email: Turkeys@Compuserve.com

April 26-29: GPF Spring Meeting, Callaway Gardens, GA. Contact: Georgia Poultry Federation, P.O. Box 763, Gainesville, GA 30503. Phone 770-532-0473.

2001 May

May 3-4: National Breeders Roundtable, St. Louis, MO. Contact: U.S. Poultry & Egg Association, 1530 Cooledge Road, Tucker, GA 30084-7303. Phone: 770-493-9401.

May 7-11: Pepa Annual Convention, Double Tree Hotel, Monterey, Calif. Contact: Pacific Egg & Poultry Association, 1521 I St., Sacramento, Calif. 95814. Phone: 916-441-0801.

May 14-15: World Mycotoxin Forum, Grand Hotel Huis ter Duin, Noordwijk, the Netherlands. Contact: Conference Secretariat, Bastiaanse Communication, P.O. Box 179, NL-3720 AD Bithoven, the Netherlands. Phone: 31-30-2294247.

May 19: GPF Night of Knights, Cobb Galleria, Atlanta, GA Contact: Georgia Poultry Federation, P.O. Box 763, Gainesville, GA 30503. Phone 770-532-0473.

2001 June

June 1-3: AP&EA Conv., Birmingham-JeffersonConventionComplex, Birmingham, AL. Contact: Alabama Poultry & Egg Association, P.O. Box 240, Montgomery, AL 36101. Phone: 334-265-2732.

June 7-10: Georgia Veterinary Medical Association Annual Meeting, Jekyll Island, GA. Contact: GVMA, 3050 Holcomb Bridge Rd., Norcross, GA 30071-1362. Phone : 770-416-1633; Fax: 770-416-9095.

June 8-9: APF Poultry Festival, Arlington Hotel, Hot Springs, Ark. Contact: Judy Kimbrell, Poultry Federation, P.O. Box 1446, Little Rock, Ark. 72203. Phone: 501-375-8131.