

Effect of Stilbesterol on Turkey Hens

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The use of stilbesterol for "chemical caponizing" of young male chickens is becoming a widespread practice among poultry producers. This synthetic hormone offers possibilities for use not only on males but on females as well, but for a slightly different purpose.

In 1949, D. F. Eveleth and associates, Department of Veterinary Science, injected turkey hens with stilbesterol to observe its effect on breeder hens. His yet unpublished information indicated possibilities of markedly improving the market grade and weight of such hens by hormone administration. With this information as an indicator, a program was set up to test the possibilities of using stilbesterol on turkey breeder hens.

For the test two pens of the Experiment Station flock of Beltsville Small White turkey hens were used. Each pen was made up of 15 hens that were full sisters and two full brother males. Trapnest and pedigree hatching records were available on each lot of birds prior to beginning the experiment. On April 28th each female in one lot was injected with two 15 milligram pellets of stilbesterol, while females in another lot were untreated and kept as a control group. All birds in both lots were individually weighed and observations made on fleshing and finish. On May 25th, 27 days later, all birds were again weighed, and then killed and dressed. All eggs produced by the birds were incubated and fertility and dead germs were checked by breaking out those eggs removed on candling or that failed to hatch.

The following data were obtained:

Table I—WEIGHT CHANGES AND DRESSING LOSSES

	♀ Av. Wt. when treated (lbs.)	♀ Av. Wt. 27 days later (lbs.)	Av. Net change lbs.	No. birds showing weight loss
Treated	9.93	10.43	+0.5	2
Untreated	10.86	10.79	--0.06	6
	Av. Gain per bird (lbs.)	Av. Eviscerated wt. per bird (lbs.)	Dressing Percentage	
Treated	2.75	7.73	74.4	
Untreated	1.15	7.95	75.0	

Table 2—PRODUCTION AND HATCHABILITY

	% Production 22 days preceding treatment	% Production 27 days after treatment	% Change	% Infertility 22 days preceding treatment	% Infertility 27 days after treatment
Treated	20.87	35.56	+70.39	22.22	20.80
Untreated	33.04	57.53	+74.12	16.67	6.03

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	% of fertile eggs dead up to 10 days incubation preceding treatment	% of fertile eggs dead up to 10 days incubation after treatment	% of fertile eggs dead 10-28 days, pipped and weak poults preceding treatment	% of fertile eggs dead 10-28 days, pipped and weak poults after treatment
Treated	5.36	4.04	19.64	14.14
Untreated	316	2.75	29.47	14.68
		% hatch of fertile eggs preceding treatment		% hatch of fertile eggs after treatment
Treated		75.00		82.83
Untreated		66.31		82.11

These birds were all fed the college turkey breeder mash free choice which is a 26 per cent protein feed. In addition dried buttermilk in pelleted form was fed as an appetizer at noon each day. A grain mixture of 25 per cent wheat, 25 per cent oats and 50 per cent corn was fed each evening on top of the mash. As much grain was fed as the birds would consume prior to the next morning. The feed consumption during the 27 day period was as follows:

Table 3—FEED CONSUMPTION

	Grain	Mash	Buttermilk Pellets	Lbs. Feed Consumed	Lbs. Feed Per Bird
Treated	64.8%	28.77%	6.34%	208.2	12.25
Untreated	71.0%	12.34%	16.65%	126.4	7.44

Discussion

Notes made at the time the treatment was started indicate that birds given the stilbesterol injections did not have the fleshing and finish of those in the control group. This observation is substantiated by the difference in weight of the birds in the two lots. The birds receiving the stilbesterol increased their weight while those not receiving did not as shown in Table 1. The two treated birds that lost weight were out of production when treatment was started and then markedly increased production. Their individual losses were 0.1 and 0.3 pounds each. Among the controls, the birds losing weight also went into production after the treatment period, however, their losses were much greater—0.9, 0.1, 0.7, 0.5, 0.2, 1.1 pounds respectively. Apparently stilbesterol enabled the treated hens to increase production and fatten at the same time while those not receiving stilbesterol could not do so. This is the only explanation for the increased feed consumption of treated over untreated. Stilbesterol apparently had little effect on the dressing percentage.

The effects of stilbesterol on production and hatchability apparently were negligible as shown in Table 2. It is doubtful that the hormone decreased production. It did not affect fertility and it did not affect hatchability adversely.

The birds treated with stilbesterol did consume more feed than the non-treated birds. The authors feel that this is due primarily to difference in fleshing and finish when the birds were treated rather than any other factor. It is regrettable that the feed consumption records on the two lots prior to the treatment of the birds were not available.

Conclusion

The data indicate that the turkey breeder can safely inject diethyl stilbesterol into his breeder hens four weeks prior to marketing without impairing the production, fertility, or hatchability of his hens during the period. This procedure is recommended particularly if the turkey breeder hens are not in top market condition as the birds approach the end of their usefulness as breeders. Breeders are cautioned, however, not to inject toms as that would materially affect fertility.

ABOUT WOODY PLANTS

"Woody Plant Seed Manual" is the title of an unusually attractive book recently issued by the U. S. Forestry Service. It is a well bound volume of 416 pages, sold by the superintendent of documents, Washington, D. C., at \$2.75. The first 50 pages deal with collection, preparation and testing of seeds. In the rest of the book each genus is discussed with good illustrations of seeds and seedlings. If several species of a genus are treated, these are tabulated or discussed further. Spruce occupies five pages, pine 16. There is a general bibliography on each group. Total number of forms treated is 444.—NDAC Botany News Letter.

"Wildlife Review" is a bulky mimeographed publication issued as abstracting service for wildlife management issued for the information of cooperators by the Fish and Wildlife Service, United States Department of Interior, Laurel, Md. The January 1950 issue of 67 pages is the 58th number. The conservationist, and indeed all citizens, will find here timely and up-to-date information on mammals, birds, reptiles, fishes and mollusks, and related information. Nearly 100 serial publications were abstracted for this January number. Included was "North Dakota Outdoors" edited by the State Game and Fish Department, Bismarck, N. D.—(H. L. W.)

DRYING SEED WITHOUT HEAT

Using calcium chloride instead of heat, engineers of the United States Department of Agriculture have shown that seed can be dried without the dangers of fire and reduced germination from overheating. The method is especially good for the small grower who cannot afford elaborate and costly regulated equipment for drying seeds with heated air.

All that is required is a bin, which can be built by any man reasonably handy with tools, and a fan. The calcium chloride costs about three cents a pound. In farm tests with lupine seed, it took about three pounds of the chemical to reduce the moisture content of 100 pounds of seed from 17.3 to 13 per cent.

The seed is dried in a tight bin with a screened bottom through which dried air is fanned. The moistened air from the top of the bin is then recirculated to the bottom of the dryer. In the dryer unit it passes first over brine from the calcium chloride, then over the flakes of the chemical, and then back to the bin again.