

Fattening Turkeys

recommendation for use of estrogens withheld

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THE FATTENING EFFECT OF ESTROGENS—well understood in chickens—has occasioned considerable interest during the past season which was the first in which estrogen preparations have been generally available to the poultry industry.

To approach the question intelligently it is necessary to understand just what estrogens do and what they don't do, and the contrasting objectives of turkey and chicken growers.

Effects on Chickens

Estrogens produce a generalized increase in the rate of fat deposition—in the muscles, under the skin and throughout the body.

Increased muscle fat improves the flavor and tenderness of the flesh, and increased fat under the skin improves the grade. These are about the extent of the useful effects of estrogens. There is no general effect on total growth.

Estrogens do inhibit growth of the testes and of the head furnishings so that wasteful development of these nonutilizable tissues is prevented, but these effects are minor. Of more importance is the quieting effect on the bird's disposition that follows depression of the testes, but even this effect does not always, apparently, operate to the advantage of the grower.

Quieter birds use less energy for running and fighting and, consequently, a higher proportion of the feed goes into growth.

Instances where treated lots of birds, have significantly outgained controls have been explained by this quieting effect, but occasionally control lots have outgained the treated birds, and at least sometimes, it has appeared that lack of aggressiveness of the treated birds has reduced their feed intake. More research will be necessary to settle this point.

Rapidly growing birds deposit little fat; feed is used instead for bone and muscle formation. Thus, chickens killed during this period as broilers or fryers are often deficient in fat and the extra fat deposited by proper estrogen treatment produces striking improvements.

As growth slows down just before maturity, fat is deposited normally, and consequently, estrogen treatment of cockerels to be marketed as roasters is not ordinarily useful.

Cocks held past maturity become very active and aggressive. They no longer deposit fat. They usually burn what fat has been deposited and their flesh becomes dark and tough. Treatment of such birds with estrogens produces striking improvements.

Effects on Turkeys

Turkeys are ordinarily killed for market only after growth has ceased, and like cockerel roasters, adequate fat has been deposited. Thus, it would seem to be doubtful whether estrogen treatment of turkeys would be useful.

Turkey hens, especially, normally have more than sufficient fat at this time, so that at most the treatment should be limited to toms.

Should the production of turkey fryers ever become popular, it would be highly desirable to know whether estrogen treatment would be effective, because such undeveloped turkeys are practically devoid of fat, and any means of increasing it would improve the product greatly. Up to the present, few turkey fryers have been marketed.

Another possible use of estrogens for turkeys has resulted from the feed price situation of the past year or two.

Turkey toms are not fed economically during the last month before normal marketing, because during that time their growth has slowed down and they are eating at the maximum rate.

That last month is considered necessary to finish the birds, that is, to permit them to deposit a layer of fat under the skin. If fat deposition could be induced earlier—for example by use of estrogens—the birds could be marketed earlier at a considerable economic saving to the grower.

Practical Tests

Experiments on turkeys have demonstrated that they respond much like chickens to estrogens, but attempts to apply these effects practically have not been entirely successful. These birds apparently require higher dosages than do chickens, and the response, at best, has not been dramatic. More research is necessary to determine the optimum conditions for treatment.

During the past season a series of field trials was made possible through the co-

operation of two growers who permitted portions of their flocks to be used as experimental birds.

To be effective for fattening, estrogens must be administered continuously for several weeks. This has been accomplished experimentally both by implanting pellets of the active material under the skin and by mixing it in the feed. The former method only has been developed to where it is available for field use, and several brands of 15 mg. diethylstilbestrol pellets are on the market for this purpose. Consequently, pellet implantations were used in these field trials.

Birds were treated at 8, 13, 18, 20, and 21 weeks of age and were killed five to seven weeks later. All birds were banded and weighed at the time they received the pellets. They were weighed again just before being killed and the dressed carcasses were graded.

Although all groups of treated birds had better average grades than had untreated birds of the same age, killed at the same time, the results were nevertheless disappointing.

In birds killed at 13½ weeks of age the differences were almost too slight to be noticeable. On the other hand, in 18- to 19-week-old birds the improvement was quite striking in that the treated birds had good fat deposits under the feather tracts while the control birds had no visible fat. Even the best of the treated birds had large areas of smooth skin devoid of visible fat.

By 25 to 26 weeks of age all birds had good fat deposits under the feather tracts, and although the treated birds appeared to have somewhat more fat the skin was not entirely underlaid. Thus, few could be given U. S. Grade A and the average grade difference was too slight to be worth the expense of treatment.

There was no difference in total gain in weight of the youngest birds, but the treated birds killed at 18 to 19 weeks of age gained over a half pound more than the controls. Among the 25-26-week-old birds, there was a slight advantage in favor of the controls from one ranch and an equally slight advantage in favor of the treated birds from the other.

Thus, the attempt to improve turkey fryers may be said to have failed.

Immature toms were definitely improved, but not so much as would be desired, and the attempt to hasten finishing to cut a few weeks from the end of the growing period was again a failure.

These results were disappointing from a practical standpoint, although they did yield some valuable data on which subsequent research will be based. Until further information is available the use of estrogens for fattening turkeys is not recommended.

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