

TAPAZOLE

Potent, Promising Grain Booster

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This is an era of feed additives, or — if you prefer — gain boosters, growth stimulants, beef builders, or miracles in the feed bunk. Compounds classed as feed additives are drugs, not nutrients like proteins, fats, carbohydrates, minerals or vitamins — and we will see more of them in the future.

Slows Up Metabolism

Tapazole is a trade name for a new synthetic chemical, 1-methyl 2 mercaptoimidazole. The pharmaceutical name for this white powder is methimazole. It acts, in the body, as an antithyroid drug, depressing the activity of the thyroid gland. It, along with other chemicals such as thiourea and thiouracil, is classed as a goitrogenic compound because of its action on the thyroid gland.

An underactive thyroid gland produces less of the hormone that regulates the basal metabolic rate of the body. If we lower basal metabolism, we lower the maintenance requirement of an animal; and, assuming feed intake remains the same, a greater proportion of the ration should be available for the production of beef.

Used With Stilbestrol

Research workers have recognized this principle for a number of years, but results in putting the idea to practical use have until recently been unimpressive in regard to the more economical production of beef. Now, Tapazole with several times the potency of any similar acting drug tried previously, looks promising when used with stilbestrol. Research workers in several states are now exploring its possibilities.

The first experimental work reported with Tapazole for farm animals was done at the University of Arizona Agricultural Experiment Station. It was a lamb feeding trial conducted in the fall of 1956.

First results were startling. Lambs implanted with stilbestrol and fed Tapazole averaged gains of .70 pound per head per day as compared to .58 pound for stilbestrol alone and .54 pound for lambs receiving the same ration with neither gain stimulant. Two additional lamb fattening trials and one with steers were conducted subsequently, but with inconsistent results.

In the fall of 1957, a second experiment with steers was conducted. Object of the trial was to determine if some level of Tapazole could be added to the ration of steers which had been implanted with stilbestrol, so as to improve the rate of gain, economy of gain or carcass grade. Seventy-two yearling Hereford steers were randomly allotted to six pens of 12 steers each and fed a finishing ration of 50 per cent concentrate pellets, 40 per cent chopped alfalfa hay, and 10 per cent hegari silage for 93 days.

Tapazole was incorporated into each pound of concentrate pellets in amounts of: none, 14 mg., and 28 mg. These levels provided the steers with 148 and 248 mg. of Tapazole daily. Steers fed each level of Tapazole were implanted with 6, 18, and 30 mg. of stilbestrol.

Observations

Table 1. Rate of Gain (Pounds per day)

Stilbestrol per steer	Tapazole per steer			
	0	148 mg.	284 mg.	Avg.
6 mg.	2.31	2.43	2.35	2.36
18 mg.	2.93	3.10	2.82	2.95
30 mg.	2.94	2.94	2.80	2.89
Average	2.72	2.82	2.66	2.73

As shown in Table 1, the combination of an 18 mg. implant of stilbestrol plus 148 mg. of Tapazole (orally) produced the most gain per day — 3.10 pounds per steer. In this 93-day trial the 148 mg.

level of Tapazole was superior to the higher level of 284 mg. in every comparison. However, Iowa workers found in one experiment that 600 mg. of Tapazole was superior to greater or lesser amounts for 900-pound steers. The steers used in the Arizona trial averaged 700 pounds initially.

Table 2. Carcass Grades* (Avg. per lot)

Stilbestrol per steer	Tapazole per steer			
	0	148 mg.	284 mg.	Avg.
6 mg.	6.12	7.25	6.87	6.75
18 mg.	7.25	8.00	7.25	7.50
30 mg.	7.62	8.00	7.62	7.75
Average	6.99	7.75	7.25	7.33

*Numbered values assigned to Federal grades: high choice, 9; medium choice, 8; low choice, 7; high good, 6; and, medium good, 5.

Data in Table 2 indicate that both stilbestrol and Tapazole affected carcass grades. The feeding of 148 mg. of Tapazole improved carcass grades from .4 to 1.75 of a federal grade point over no Tapazole, all in the presence of stilbestrol.

Use Not Yet Permitted

Meanwhile, we await further research results. Tapazole is not available except for limited and controlled experimental use. It is not permitted by federal and state regulations, and permission will not be requested until research proves two points: (1) Will it work toward the more economical production of meat or improve meat quality? (2) Is there any effect due to the feeding plan proposed that would make the meat undesirable for human consumption?

Thus these facts are a report of progress and research and not a recommendation for usage.