

Aureomycin in Livestock Feed

antibiotic in form of a prepared alfalfa-base pellet added to ration in feeding trials with weaner calves and yearlings

Blaine McGowan and Reuben Albaugh

Recently beef and lamb producers have adopted the practice—formerly restricted to poultry and swine producers—of adding antibiotics to livestock rations.

Antibiotics are not nutrients like vitamins and proteins, but may be classified as medicines, drugs or health insurance agents. Antibiotics are thought to be effective because they control the growth of harmful bacteria. Their benefit to an animal is based upon the fact that a healthier animal is able to grow faster and convert feed into meat more efficiently than one less healthy.

The results with antibiotics in cattle feeding have been rather spotty and irregular. Research workers in Iowa conducted 32 experiments in which antibiotics were fed to fattening cattle. In 23 of the 32 tests, aureomycin was fed at the rate of 40–150 mg—milligrams—per head daily. The results of the trials indicated that weight gains were increased by 6% and feed saving by 4%. In about one half of the trials there was no increased gain. In nine trials using terramycin fed at the levels of 50–150 mg daily gain was stimulated by 7% and feed efficiency increased 4%.

Other research conducted in Florida produced indications that feeding aureomycin to beef cattle has several benefits:

1. It decreases incidence of scours, increases growth rate, and reduces liver abscesses.
2. It may increase rate of gain and feed efficiency in fattening steers.
3. It improves hair coat and produces more bloom in the animal.

Reports of still other research—in Indiana—state that in cattle feeding, antibiotics gave best results when included in a ration high in roughage.

Trials in Three Counties

In view of these data three feeding trials were established in California during the winter of 1957. The trials were in Modoc, Shasta, and Butte counties with weaner calves and yearlings fed for continuous growth in the dry lot.

The animals—good-to-choice steers and heifers—were weighed individually and identified at the beginning and again at the end of each trial. The cattle were placed in two different groups of about the same age and quality in each lot. In each trial they were fed the same ration except that the control lots did not receive any aureomycin.

The aureomycin used was in the form of Auropep, a prepared alfalfa-base pellet containing two grams of aureomycin per pound of feed, and was fed at the rate

of 0.04 pound per head per day. The pellets were sprinkled on top of the concentrate ration in the Shasta County trial and mixed with the concentrate in the Modoc and Butte trials.

In the Modoc County trial, 166 weaner steers were used; 82 in one group and 84 in the other. One half of the steers in each lot were treated with phenothiazine to control internal parasites. The two lots were subdivided so group one received aureomycin only; group two received aureomycin and phenothiazine; group three received only phenothiazine; and group four—the control—received neither aureomycin nor phenothiazine. There was no significant difference in the rates of gain of the animals.

The Shasta County trial was similar to the Modoc test, except that both weaner heifers and steers were used. Each lot contained about the same number of heifers as steers. Again, there was no significant difference in the rates of gain of the Shasta County cattle. In fact, cost per pound of gain was higher in the lots that were treated.

The Butte County trial was similar, but more simply conducted. Yearling heifers were used in this test. Twenty head were included in each of the two groups. Phenothiazine was not incorporated in this test. Again there was no significant difference in rates of gain in the Butte County trial.

Results of Trials

The incidence of pink eye was about the same in all groups; however, on final weigh day in the Butte trial eight animals needed treatment for foot rot in the control pen but none in the aureomycin pen. In all three trials the treated animals did not appear to have any more bloom than those animals that were not treated.

Feed additives must be incorporated in a ration in a manner to assure an even distribution and hence a continuous daily intake. In these trials, the addition of aureomycin in the form of a pellet may not have afforded an equitable intake and therefore may have influenced the final results.

The cost of antibiotics, the health of the animals, and the type of ration they are receiving plus counsel with someone

Butte County Trial

Treatment	No. of animals	Initial weight	84-day gain	Ave. daily gain	Hay	Concentrate
Auropep	20	415.5	126.25	1.53	13.5	2.25
No treatment	20	427.75	138.75	1.59	13.5	2.25

Modoc County Trial

Treatment	No. of animals	Initial weight	112-day gain	Ave. daily gain	Hay	Concentrate
Auropep	41	483.5	139.9	1.25	21.2	2.0
Auropep plus phenothiazine	41	466.0	144.1	1.29	21.2	2.0
Phenothiazine only	44	501.0	139.2	1.24	20.7	2.0
No treatment	40	486.0	139.1	1.24	20.7	2.0

Shasta County Trial

Treatment	No. of animals	Initial weight	125-day gain	Ave. daily gain	Return per head	Hay	Concentrate
Auropep	50	404.80	146.40	1.17	14.75	10.84	2.79
Auropep plus phenothiazine	50	400.96	143.69	1.15	14.75	10.84	2.79
Phenothiazine only	44	399.24	145.25	1.16	16.68	10.93	2.79
No treatment	45	403.10	147.95	1.18	16.68	10.93	2.79

A new strawberry variety—the Solana—is released by the University of California for unrestricted propagation. California nurserymen were supplied a few plants in 1957 to establish foundation stock. Plants should be generally available by December 1958. The University of California does not have plants for distribution.

Solana Strawberry

new variety yields fruit of high quality in southern California trial plantings

R. S. Bringham and Victor Voth

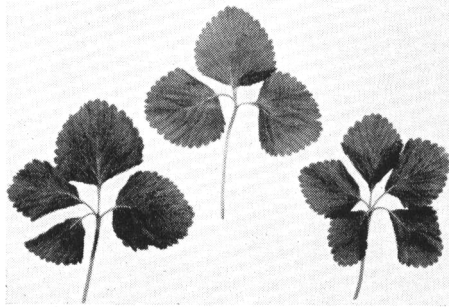
The new Solana strawberry may prove to be a good supplemental variety to Lassen for commercial and home-garden culture because of superior fruit quality. However, Solana does not yield as well as Lassen, nor does it start production as early.

Solana originated in 1935 as a cross between selections Cal. 177-19 and Cal. 103-22 and has been tested as Cal. 35.93-11. The selection is named for the town of Solana Beach, near where much of the testing was done.

Although Solana is as old as the Shasta Variety and tested—in a limited way—in northern California from 1939 to 1950, it was not tested in southern California until 1953. Since then, Solana has been compared with Lassen at Torrey Pines, Fallbrook, San Luis Rey, and Santa Ana. Trials have been completed on both winter—December—and spring—April—plantings. During 1957, Solana has been successfully established in summer plantings, growing more vigorously than Lassen.

Quantity fruit production on Solana begins 7–10 days later than Lassen at Torrey Pines and Santa Ana. First-year production from plants set in early to mid-December—winter—has been about one half that harvested from Lassen plants handled the same way. Solana has compared more favorably with Lassen during the full production season that follows. The plants have persisted as long as Lassen in test plantings.

The fruit of the Solana is large to



Characteristic 3, 4, and 5-foliate leaves of the new Solana strawberry. Note the long leaflet petioles—petiolules.

medium large in size and has a very symmetrical, conic to blunt conic shape. The color is bright red with a glossy finish and the yellow seeds are flush with the surface and medium in size and spacing. The slightly pubescent skin is relatively resistant to injury. The flesh is moderately firm and juicy and uniformly red and aromatic when ripe. The pleasing subacid flavor gives the fruit a good dessert quality. Also, the fruit holds well in storage and does not darken.

The plant of the Solana is vigorous and large with a medium open crown. It is a prolific runner maker. The leaves are large, borne on long petioles, and of a medium deep green. The leaflets are broad obovate, upcupped, and borne on exceptionally long petiolules. Often there are 4–5 leaflets instead of three. The flower stocks are long to medium long and high branching. The pedicel pubes-

cence is appressed—slanted upward. The flowers produce copious amounts of pollen.

Solana is highly susceptible to Verticillium wilt but is more resistant to mildew than Lassen and has resisted infestation with cyclamen mite better than Lassen on several occasions. It reacts to virus infection similarly to Lassen and appears to be moderately tolerant of salinity.

In southern California, the most first-year production from winter plantings of Solana has been obtained from plants set by December 10–20. Those set later have gone to runners too early to produce well. Also, plants set too early lack vigor.

Relatively high yields have been realized from spring-planted test plots of Solana near Berkeley and at the Deciduous Fruit Field Station at San Jose. Low to near-acceptable yields were obtained from winter plantings made in early December 1956 in the central coast area at San Jose, Salinas, and Watsonville. All of the above plots were small, and further tests should be made.

Solana has yielded reasonably well in small plots at Davis and Wheatland and should be further evaluated in the central valleys.

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The above progress report is based on Research Project No. 1386.

trained in animal feeding are factors to be studied before antibiotics are incorporated in a cattle ration.

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Norman E. Nichols, Modoc County; Jesse W. Baquette, Shasta County; and Alva W. Mitchell, Butte County; Farm Advisors, University of California, cooperated in the feeding trials reported here.

The experiments with antibiotics in Iowa referred to in the above progress report were carried on by Dr. Wise Burroughs; those in Florida, by Dr. T. J. Cunha; and in Indiana, by Dr. T. W. Perry.

ALFALFA APHID

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the parathion treatment. By contrast, in the Systox plots where beneficial insects survived the treatment in godly numbers, aphids were destroyed as they reinvaded the plots. Thus, seven days after application there was still less than one aphid per alfalfa stem where Systox was used. Ten days after application aphids averaged 14 per stem in the parathion plots, 8 per stem in the Phosdrin plots and only 1.5 per stem in the Systox plots.

The use of Systox should lower long-term costs of treatment because of fewer

applications. Moreover, there probably will be a reduced tendency for the development of resistance by the aphid, and a reduced threat of secondary insect outbreaks which might develop following use of more widely toxic insecticides.

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The above progress report is based on Research Projects Nos. 1443 and 1650.