H. T. STRONG, M. T. CLEGG, AND J. H. MEYER

Enzymes as a feed additive for

Finishing Beef Cattle

failed to show significant benefit in feed lot trials

Some 900 steers were included in the first of a series of trials designed to field test feeds, feeding practices, and the reported benefits accruing from the addition of an enzyme to a feed lot finishing ration.

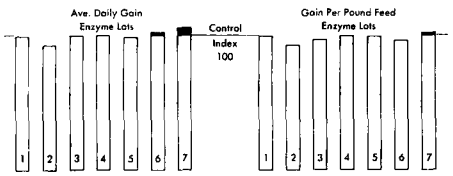
The trials were conducted in cooperation with feed lot operators in Fresno, Kings, Los Angeles, Riverside, Imperial, Santa Barbara, and Napa counties. From 32 to 91 animals were involved in the test in each feed lot, with a total of some 900 head in the entire trial.

The cattle were steers of varied origin. With the exception of two trials with Brahman crossbreds, the animals were straight Hereford breeding with a few Hereford-Angus crossbreds in two of the tests. Most of the cattle were within the Choice to Good feeder grades. In each test the animals were randomly selected into two lots. One lot, which served as the control, was fed the regular feed lot ration. A commercially prepared enzyme was added to the ration of the second lot.

Prior to each trial, the cattle were randomly sorted into two pens and fed the regular feed lot ration for about two weeks. They were then weighed, following an overnight stand without feed or water.

The animals in the control pen in each feed lot were provided with the regular feed lot ration. The animals in the test pen were given the same ration with the enzyme material added at the rate of 31 grams per head per day. In four of the seven trials the enzyme was mixed with the ration in a batch mixer. In the remaining three trials a daily

Steers in feed lot trial with enzyme additive in ration.



measured amount of enzyme was sprinkled over the feed in the trough and mixed into the ration by hand with a fork. Addition of enzymes had no apparent effect on palatability of the ration.

All rations fed were similar in composition, with a roughage-concentrate ratio of approximately 25 to 75 when on full feed. Samples of the control ration were collected at intervals during the trial and analyzed for dry matter, protein, fat, ash, nitrogen free extract, fiber and lignin content.

In all trials stilbestrol was included in the regular feed lot ration and was, therefore, fed to both test pen and control pen at 10 milligrams per head per day.

At the close of each trial all lots were again weighed, following an overnight stand off feed and water.

While the number of head, days on feed, initial weight of cattle, average daily gain and feed consumed per pound gain varied between feed lots in the trial, there was little or no difference for any of these items between the control and test pens within each test.

In the four trials from which slaughter data were available, there was no significant difference in the dressing percentage between the control pen and the test animals. Most of the carcasses graded U. S. Choice. In one test 90% in the control group graded Choice, but only 83% of the enzyme-fed group reached Choice.

H. T. Strong is Extension Livestock Specialist, University of California, Davis.

M. T. Clegg is Assistant Professor of Animal Husbandry, University of California, Davis.

J. H. Meyer is Associate Professor of Animal Husbandry, University of California, Davis.

Direct supervision of the feeding trials was maintained by the farm advisors in the test counties.

MELONS

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with symptoms of natural infection by curly top. Experimentally infected plants had the same symptoms that were almost universal when the crop failed in 1958: stunted gray-green plants, some very small; death of crown leaves; sparse set; fruit small in size, poorly netted, elongate, low in sugar, and ripening prematurely.

The Palo Verde Valley melon crop failure in 1958 probably was caused by curly top infection from the large beet leafhopper population present that year. Some of the infection was early and some late, but almost all melon plants must have been infected by curly top virus.

In 1958 the melon plant disorder was referred to as crown blight. The deduction that curly top infection—particularly when late—can contribute to at least one condition of crown blight is supported by the almost complete absence of crown blight in the Palo Verde Valley in 1959, when curly top infection was very rare.

The wet winter of 1957–58 caused a large growth of desert annual plants favored by the beet leafhopper as breeding hosts. The leafhopper population bred up on the desert and, when the vegetation dried up, migrated to the valleys. The winter of 1958–59 was dry with no desert annual vegetation and therefore contributed to the low beet leafhopper population in the spring of 1959. Other factors may have helped keep the population low; for instance, a rather small beet leafhopper flight into the Palo Verde Valley while the melon plants were coming up did not remain, but seemed to migrate north.

R. A. Flock is Assistant Entomologist, University of California, Riverside.

E. F. Laird, Jr., is Senior Laboratory Technician in Entomology, University of California, Riverside.

R. C. Dickson is Entomologist, University of California, Riverside.