Feedlot Tests Check Use of Concentrates

Four Concentrate-Roughage Ratios For Fattening Steers Are Compared

By O. F. Pahnish

Changes in the composition of cattle fattening rations are often advisable because of the variability in the supply and price of livestock feeds. One method by which such adjustments may be made involves a change in the proportions of the ration components used. Such changes must of course be governed by the nutritional requirements of the animals being fed. The extent to which these requirements are satisfied can be judged largely from the gains obtained.

During the past year, the University of Arizona in cooperation with the Tovrea Land and Cattle Company conducted a feedlot test to determine the influence of different proportions of concentrates in fattening rations fed to yearling steers. Feeds that are commonly found in Arizona fattening rations were used.

Four Concentrate Levels Used

Four concentrate levels were tested. The high concentrate ration consisted of 2 parts of concentrates to one part of roughage. In each of the succeeding rations, the proportion of roughage was increased. The percentage composition of the test rations, and the ratios of concentrates to roughage in each, are shown in Table I.

Each test lot was comprised of 38 to 39 yearling range steers. These animals were subjected to a preliminary feeding period of about 30 days. During this period, concentrate feeds were gradually increased so that the test rations could be offered at the beginning of the experimental period. No changes in concentrate levels were made after the test began. At the conclusion of a 105-day test period, the steers were appraised by a committee of livestock commission men and a committee of packer buyers.

The results of the feedlot test are shown in Table II. As indicated in this table, the highest daily gains were made by the steers in Lot 1 on 2 parts of concentrates to 1 part of roughage. Though the animals of the remaining lots made commendable gains, the rate of gain decreased somewhat as the proportion of concentrates was decreased. The average daily feed consumption, and the quantities of roughage and concentrates required to produce 100 pounds of gain are recorded in the table.

TABLE I

Rations Fed

Lot Number	1	2	3	4
Steers per lot	39	39	38	38
Concentrate-Roughage Ratio	2:1	1:1	1:2	1:3
Rations Composition —%				
Barley (Rolled)	26.94	18.00	8.36	3.70
Hegari Grain (Cracked)	26.94	18.00	8.36	3.70
Cottonseed Meal (43%)	8.00	10.00	12.00	13.00
Molasses (Cane)	5.00	5.00	5.00	5.00
Roughage	33.12	49.00	66.28	74.60
Roughage Composition —%				
Cottonseed Hulls	30.62	30.62	30.62	30.62
Alfalfa and Cereal Hay (Ground)	69.38	69.38	69.38	69.38

Steers Appraised

At the conclusion of the test period, the appraisal committees valued the steers of Lot 1, finished on 2 parts of concentrates to 1 part of roughage, at $36.50 per 100 pounds of live weight. The animals in Lots 2 and 3 were appraised at $36.00 and those in Lot 4, fed the high roughage ration, at $0.50 lower. These values were based upon beef prices existing in March 1951.

The net returns per head obtained on the various rations are listed in Table II. These returns were based only upon cattle prices and feed costs. Labor and other incidental costs were not considered. The net returns realized from the animals in Lot 3 were somewhat higher than anticipated, and this was attributable largely to the fact that the animals in Lots 2 and 3 were found to be of equal market value at the conclusion of the test. Since price relationships are changing

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Cattle on feeding test conducted by the Animal Husbandry Department of the University of Arizona at Tovrea Land and Cattle Company Yards, Phoenix, Arizona. Another view is shown on the cover page.

TABLE II

Results of 105-day Feedlot Test (Per Head Basis)

Lot Number	1	2	3	4
Concentrate-Roughage Ratio	2:1	1:1	1:2	1:3
Steers Per Lot	39	39	38	38
Av. Final Wt.	975.5	992.9	982.7	941.3
Av. Initial Wt.	691.2	713.1	718.4	683.3
Av. Total Gain	284.3	279.8	264.3	258.0
Av. Daily Gain	2.71	2.66	2.52	2.46
Av. Daily Ration (lbs):				
Barley (Rolled)	6.66	4.89	2.25	.99
Hegari Grain (Cracked)	6.66	4.89	2.25	.99
Cottonseed Meal	1.98	2.72	3.23	3.47
Molasses (cane)	1.24	1.36	1.35	1.34
Roughage (Ground)	8.19	13.30	17.86	19.94
Feed Per Cwt. Gain (lbs):				
Concentrates	610.95	519.63	361.04	276.38
Roughage	302.55	499.25	709.66	811.43
Total	913.50	1018.88	1070.70	1087.71
Feed Cost Per Cwt. Gain	$23.18	$23.05	$21.55	$20.67
Final Appraisal Value (Cwt)	$36.50	$36.00	$36.00	$35.00
Net Return	$71.12	$67.36	$69.81	$60.47

Does Root Rot Attack Castor Beans?

Present Tests Show No Apparent Effect

By R. B. Streets

Whenever a new crop is introduced the thoughtful growers inquire about possible damage to the crop from plant diseases and insect pests known to be present in the region. The demand for castor beans and the price of $260 per ton for the seed created considerable interest last spring in Yuma and Maricopa counties and about 5,000 acres were planted, principally in the Yuma valley.

Castor beans are known to be very susceptible to root-knot, caused by a nematode, but fortunately this pest is not nearly so prevalent in farm fields as it is in gardens and ornamental plantings. Castor beans have been reported to be very susceptible to Texas root rot in Texas, so the strain developed for machine harvesting was included in the root-rot rotation experiments on the Salt River Valley Experiment Farm at Mesa in 1951.

Two plots of .2 acre each, showing 45 and 30 percent of the cotton plants killed by root rot in 1950 were planted to castor beans in 1951. No plant was killed, injured, or visibly affected in any way by Texas root rot at the end of the season.

Observations of field plantings by the writer and staff members of the Yuma Experiment Station and the Yuma County Agricultural Agent's Office also failed to find a single instance of root rot infection in castor beans.

On the basis of this limited information, it appears probable that at least the strain of castor beans now grown is much more resistant to root rot than the literature indicates. More extensive tests will be made in 1952.

—R. B. Streets is Associate Plant Pathologist.

Results Given For Cotton Tests

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problem in many of the fields of this area. The non-tolerant varieties were used as checks, as both will produce well in the absence of wilt. (Table 2.)

A new variety obtained from California, 29-16, led in yield of lint per acre as it did in 1950. There was no significant difference in yield between 29-16 and the other three tolerant strains, but there was a highly significant difference between tolerant and non-tolerant, or between 29-16, 1517B, 1517C and 29-46 on one hand, and P18-C and 4-42 on the other.

The strength of yarn of all of the tolerant strains was excellent, and the appearance was average to good. The nep count was low in all cases.

Provision has been made in the Safford area for the production of pure seed of both 29-16 and 29-46, and both varieties will be more thoroughly tested in the 1952 season.

—E. H. Pressley is Plant Breeder at the University Agricultural Experiment Station.

U of A Scholarships

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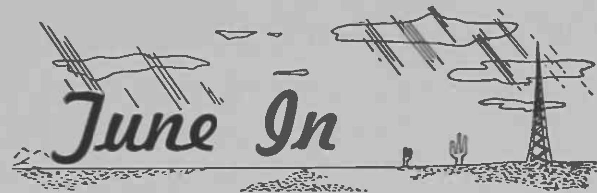
school administrator for further information and application forms, or make inquiry directly to the Chairman of the Committee on Scholarships and Awards, University of Arizona, Tucson.

—R. W. Cline is Head of the Department of Agriculture and Home Economics Education.



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Wednesdays

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Saturdays

KGLU, Safford, 1:15 p.m.—Stepping Along With the Agricultural Extension Service.

Feedlot Tests Check Use of Concentrates

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constantly, the financial comparisons found here can not be applied generally.

The results of this test indicate that each of the 4 rations described are capable of producing creditable gains when fed to yearling steers if the ration components are of high quality. However, a somewhat longer feeding period should be anticipated if the higher roughage rations are fed. When roughage prices are favorable, a sufficient advantage may be obtained in economy of gain to justify an extension of the feeding period.

The conclusions drawn from the above observations apply rather specifically to the rations tested. The results that were obtained are not necessarily indicative of the comparative results that may be expected from various concentrate levels if the rations are compounded from constituents differing markedly in feeding value from those tested.

—O. F. Pahnish is Assistant Animal Husbandman.

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