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USING WHEAT IN THE BEEF FEEDLOT

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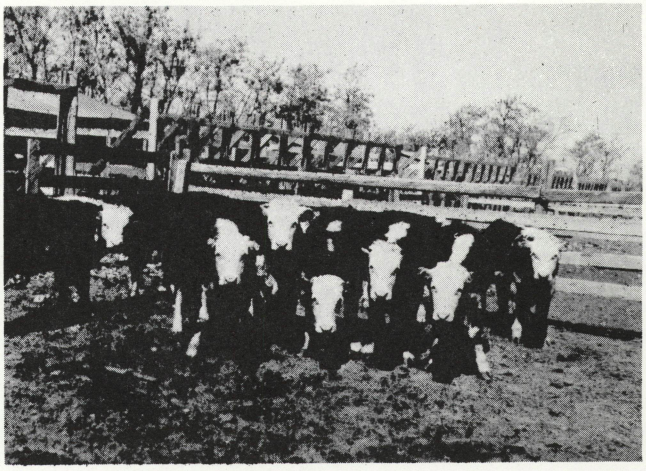

Wheat can be included in the newer all-concentrate rations to add economical gain to feedlot steers this winter. In 1963-64 trials at the Caldwell Branch Experiment Station, where wheat replaced half the barley in the ration, feed consumption was high, feed efficiency was excellent and slaughter grade equaled that of steers fed standard all-concentrate barley rations.

Feeder calves started on hay and silage last fall will soon be ready for a high-energy finishing ration.

Many Idaho cattle feeders who have been following newer feeding practices may want to use wheat in all-concentrate rations this winter. Wheat is competitively priced with feed grains in a number of areas. Some feeders who were planning ahead at harvest time already have wheat on hand for feeding. The job now is to include the wheat in the feedlot ration most advantageously.

THE FEED VALUE OF WHEAT

Wheat has about the same feed value as barley in the western feedlot, though it may be somewhat more difficult to feed. Compared to corn, it has the same to 5% more feed value. Wheat is best fed mixed with other grain and most efficiently utilized by cattle when either steam rolled or coarsely ground.

IDAHO FEED TRIALS COMPARING WHEAT AND BARLEY

In the fall of 1963, 60 heavy Angus steer calves were started on a 174-day feed at the Caldwell Branch Station. *During the first 84 days the calves were fed all the roughage they would eat plus 4 pounds of concentrate daily.* Later they were given a 90-day all-concentrate finish. The roughage was made up of 6 parts of corn silage and 1 part alfalfa hay. The all-concentrate rations used are shown below.

Percentage composition of all-concentrate rations fed*

Ingredients	Barley ration	Wheat ration	Barley-wheat ration
Barley, steam-rolled	63.5	----	32.5
Wheat, steam-rolled	----	63.5	31.0
Dried molasses beet pulp	30.0	30.0	30.0
Soybean oil meal	4.0	4.0	4.0
Bonemeal	1.5	1.5	1.5
Salt	1.0	1.0	1.0
Protein (percent)	12	12	12

*Each ration had 20,000 IU Vitamin "A" per steer per day.

Over the 174-day feeding period, the steers fed the wheat-barley ration, made gains of 2.07 pounds daily. This was not significantly different from the 2.19-pound gains made by the steers on the barley ration. Cost per hundred pounds of gain for the steers fed the wheat-barley ration was $19.65. Wheat was included in this ration at $67 per ton. The average daily gain for the steers on the high-wheat ration, was slightly less than for the steers on the barley ration but feed requirements per 100 pounds of gain compared favorably.

At the end of the 174-day feeding period, the steers were graded. One steer in the barley-fed or control group, graded Prime, 8 graded Choice and 1 graded Good. In the group having nearly

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53
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two-thirds of their concentrate made up of wheat, 7 steers made Choice, 3 graded Good. Where wheat replaced only one-half of the barley in the concentrate ration, all 10 steers graded Choice.

The initial weights, slaughter weights and average daily gains for the 174-day feed, including the roughage and all-concentrate phase, are shown below:

Three groups of steers fed roughage plus 4 pounds of concentrate for 84 days and then given a 90-day all-concentrate finish

Ration	Initial weight	Slaughter weight	Average daily gain	Feed per 100 pounds gain	Cost per 100* pounds gain
	Pounds	Pounds	Pounds	Pounds	Dollars
Barley	628	1003	2.16	1262	17.90
Wheat	630	986	2.04	1268	19.87
Barley-wheat	624	984	2.07	1311	19.65

*Feed prices per ton: Alfalfa hay $24, corn silage $9, barley $50, wheat $67, soybean oil meal $111, Salt $36, dried molasses beet pulp $37, bonemeal $100.

RESULTS DURING THE FINAL FINISHING PERIOD

There was a small amount of hay and corn silage fed during the first ten days of the final finishing period. This was made necessary in the switch-over from a high-roughage ration to an all-concentrate ration. The comparisons of barley and wheat rations in the final period are shown below:

A 90-day comparison of 3 all-concentrate rations

Ration	Starting weight	Slaughter weight	Average daily gain	Concentrate per 100 pounds of gain	Cost per 100 pounds of gain
	Pounds	Pounds	Pounds	Pounds	Dollars
Barley	806	1003	2.19	889	22.34
Wheat	815	986	1.90	861	26.22
Barley-wheat	796	984	2.08	885	24.52

Again, the barley-fed group of steers produced the most economical gain. However, the difference between the barley-fed and the barley-wheat fed groups was not significant. The combination of ⅓ each of wheat, barley and dried beet pulp compared very well with the high-barley ration. There was no problem in obtaining maximum consumption.

Since the cost of wheat this feeding season is much lower than in 1963, a table has been prepared to show what beef gains made with wheat would currently cost as compared with barley. Assuming a $40/ton price for both grains, gains

What gains would have cost over a 90-day feed period if wheat and barley each were available at $40 per ton

Ration	Total Feed Cost* Concentrate	Hay & silage	Average daily gain	Conc. per head per day	Cost per 100 pounds of gain
Barley	$376.59	$7.49	2.19	19.5	$19.50
Wheat	316.61	5.12	1.90	16.4	18.81
Barley-wheat	356.96	6.46	2.08	18.4	19.38

*Includes cost of small amounts of hay and corn silage fed during the 10-day change-over period from high-roughage to all-concentrate rations.

where wheat replaces half the barley in the ration would cost $19.38 as compared to $19.50 for the barley ration.

Maximum consumption of an all-concentrate ration can be obtained when the ration is approximately one-third wheat if barley and beet pulp are included in the ration. Even higher levels of wheat can be fed in all-concentrate rations with good results when wheat is competitively priced with other grains.

KEEP THE FINAL FINISHING PERIOD SHORT

Animal scientists at the University of Idaho believe very strongly that cattle feeders often increase their costs unnecessarily by extending the final feed period. Ninety to one-hundred days is a long final finishing period. Seventy-five days on a properly formulated all-concentrate ration will put a high percentage of Choice feeder steers in Choice finish after 100 days of good roughage and a limited amount of grain.

SUGGESTIONS

Where wheat is competitively priced with other grains it should be considered for use in feedlot rations. Work at the Caldwell Branch Station shows conclusively that wheat can make up to ⅓ of typical Idaho non-roughage beef finishing rations without depressing feed consumption or rate of gain. Excellent gains and feed efficiency will be realized with wheat substituted for half the barley in Idaho all-concentrate rations. Good success can be expected where wheat replaces barley entirely, if beet pulp is included in the ration.

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