Space Requirements and

DUST CONTROL

For Feedlot Cattle

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Feedlot spacing at 50 sq ft per head resulted in wetter surfaces than needed to control dust.

A feeding trial conducted in Tulare County indicates that dust from feedlots in summer can be controlled by reducing allotted space as low as 50 square feet per head, without adversely affecting performance of cattle.

THE GENERAL PRACTICE in lower San Joaquin Valley feedlots is to load corrals fairly heavy during the dry season, and then to spread the cattle out during the wet winter months to alleviate the mud problem. However, a survey of Tulare County feedlots in the early summer of 1962 showed that the space allotted per head ranged from a low of about 100 square feet to a high of 500 square feet or more—indicating little agreement on optimum space allotments during the dry part of the feeding year.

Dust created by the cattle milling around at dusk during the hot summer and fall can adversely affect the health of cattle and can also be a nuisance to nearby residents and crops. This dust can be eliminated if the cattle are crowded to the point that a damp condition is maintained in the corral. This test was designed to obtain information on the effect different space allotments might have on the performance of cattle being fattened during the dry season. The trial was conducted at the John Guthrie feedlot, Porterville, using three pens of cattle which were allotted 150, 100, and 50 square feet of space per head. The cattle used were selected from the heavy end of a group of rather plain crossbreds that had arrived in the feedlot about three weeks prior to the start of the trial.

The cattle had been worked up to full feed before the trial started and received an 80% concentrate feed for the entire trial period. Temporary fences were erected at the rear of the pens to give the desired area per head while maintaining 1.5 linear feet of manger space per head.

Recording

Each of the three groups was equally divided with initial weights, final weights and carcass, grade and yield information being recorded. Feed consumption, feed conversion, and feed cost data could not be obtained on each group, however, since the two groups receiving the same treatment were in the same pen. The results of the trial are presented in the table.

While those cattle receiving 100 square feet per head performed best on the average, daily gain data show differences within a treatment to be as great as those occurring between treatments. This would tend to indicate a lack of significant difference between treatments. Corral surfaces in the 100 and 150 square feet per head grouping were dry enough to cause a dust problem, whereas the surface of the 50 square feet per head grouping was wetter than necessary—or desirable.

Feedlot spacing at 150 sq ft per head allowed dust condition from dry surfaces.

Feedlot spacing reduced to 100 sq ft per head still left corral surfaces dry enough to allow a dust problem. Optimum spacing for dust control appears to be between 50 and 100 sq ft per head. Performance of cattle in the feedlot was not affected by any spacing differences in these tests.

Periodic inspections for fly larvae were made to check the possibility that fly breeding could occur in this moist environment. However, this heavy concentration of cattle packed the corral surface too tightly to allow fly breeding at any time during the trial.

Moisture control

The degree of moisture of the corral surface was controlled only by the daily fecal and urine output per head, which in turn is related to body size. For this reason, the best indicator of space allocation for elimination of the dust problem is the allocation of square feet per cwt of cattle rather than per head. Under the conditions of this trial, 8.5 square feet per cwt failed to settle the dust and 5.5 square feet per cwt produced a surface which was wetter than desirable. It seems, therefore, that a space allotment between these limits would produce a satisfactory corral surface. The figure would vary in different areas of the state, according to local climatic conditions.

No differences were observed between groups as to the relative comfort of the cattle during the heat of the day. All groups had a tendency to crowd around the fence or water trough during this period as indicated by the accompanying pictures.

While the results of this trial need further confirmation from subsequent studies, they do indicate that cattle being fattened in a feedlot can be crowded enough to eliminate dust without adversely affecting economic performance.

Robert F. Miller is Farm Advisor, Tulare County.

GUTHRIE FEEDLOT SPACE TRIAL
May 29, 1962—August 21, 1962

Pen	A		B			C		
Lot	2	3	4	5	6	7		
Square Feet Per Head	150		100		50			
Square Feet Per cwt In	16.3		10.9		5.5			
Square Feet Per cwt Out	13.0		8.5		4.4			
No. Head	21	21	21	21	21	21		
No. Days	85		85		85			
Avg. In Wt.	907.9	912.4	905.7	931.0	919.7	924.2		
Avg. Out Wt.	1129.6	1144.9	1157.3	1175.2	1162.5	1146.4		
Daily Gain	2.61	2.73	2.95	2.87	2.88	2.64		
Overall Daily Gain	2.68		2.91		2.76			
Feed Per Head Per Day	28.13#		28.98#		29.05#			
Feed Per Pound Gain	10.54		9.95		10.53			
Cost Per Head Per Day	$0.736		$0.758		$0.760			
Cost Per Pound Gain	0.276		0.260		0.276			
*Actual Yield	60.47	61.11	61.74	60.75	61.53	61.36		
No. Choice	9	11	9	8	8	8		
No. Good	12	10	12	13	13	13		

* To make the results more comparative, all data have been adjusted to a 61 per cent yield except initial live weights. This weight was obtained from a gross weight less 5 per cent and actual yield was calculated in the same manner.

NEW MOSAIC-FREE LETTUCE SEED PROGRAM PROMISING IN SALINAS VALLEY

INDICATIONS THAT GROWER losses from lettuce mosaic in the Salinas Valley can be significantly reduced were obtained from a 5,000-acre test area this year. The control program was built around four points. The most important of these was the use of seed found to contain no mosaic in 30,000 seeds tested. The new program was developed by a growers' committee with the cooperation of the Agricultural Extension Service.

Lettuce mosaic has caused losses running into millions of dollars annually in the Salinas Valley and other commercial lettuce areas. Thousands of acres of infected lettuce have been disked up in past years. Research, started in the late 1940's, led to a seed-indexing program and a Monterey County ordinance providing for planting seed with only one-tenth of one per cent, or less, of seed-borne mosaic. This program was effective in holding down extreme losses in much of the lettuce-growing area.

However, in areas of the Salinas Valley where lettuce is repeatedly planted for a major portion of the year, growers still suffer severe losses. The small amount of mosaic still being introduced into these areas through infected seed and the repeated plantings lead to severe epidemics if aphid populations are high. For instance, in recent years growers in the Spreckels district have not grown lettuce for harvest later than August 15 to 20 because of the severe infection expected after that time.

The growers' committee set up a four point program calling for (1) the planting of seed containing no seed-borne mosaic in 30,000, (2) a cleanup of weeds that might host the disease, or the aphid, (3) disking out all lettuce fields immediately after harvest to eliminate the spread of mosaic from these old fields to younger healthy fields, and (4) planned plantings to reduce the interplanting of young and old fields. Growers assessed themselves one dollar per acre to finance the indexing of commercial seed lots to find those "free" of mosaic. The weed cleanup program was initiated and plantings planned as carefully as possible. The results of this year's work are very encouraging, and the program is to be expanded considerably next year.—*Arthur Greathead, Farm Advisor, Monterey County.*