

● **Cattle Feeding**

(Continued from page 1)
 1 That cattle require roughage for health and efficient growth
 2 That minerals found in hay must be added to finishing rations
 3 That vegetable proteins are superior to synthetic urea
 4 That wheat cannot be fed as the major source of carbohydrates
 Beltsville scientists R. R. Oltjen, R. E. Davis, and James Bond fed several lots of yearling steers an all-grain corn finishing ration for about 16

weeks to slaughter weights of 800 to 1100 pounds. The steers maintained good health, gained rapidly, and converted feed efficiently—and produced carcasses of acceptable market quality.
 In the early studies, it was found that cattle do not need the additional bulk of roughage usually fed. Two lots of yearlings were fed free choice on like rations of corn plus supplements except that half of the animals also received cobs ground and mixed into the ration for bulk. Cattle receiving the additional cobs ate just enough more of the ration to get the same amount of grain eaten by the group on all grain. The growth rate and carcass grades were similar.

Certain minerals usually obtained from hay are lacking in the high grain rations. Feeding zinc or steamed bone-meal gave no benefit. A buffering mixture of calcium and potassium carbonates and magnesium sulfate were added to the all-grain rations to obtain a favorable ruminal pH and to add needed minerals. This mineral combination (1) had little effect on gain and feed efficiency, (2) caused the only case of bloat, and (3) lowered carcass quality an average of 1% of a grade.

Although vegetable protein supplements are traditional with cattle feeders, urea was found in the Beltsville studies to be equal to soybean meal when meas-

ured by animal performance.

Wheat was substituted for corn in the finishing ration fed other groups of steers. Rate of gain and feed efficiency were reduced when wheat comprised more than 60% of the total ration. Cattle fed an all-corn ration gained 31 pounds daily compared to 26 pounds for cattle on an all-wheat ration. Although corn was a superior feed grain in these tests, wheat contains more protein and therefore requires less protein supplement, and sometimes is cheaper, as in 1964.

The success of the Beltsville research questions the contention that all-concentrate feeding may be responsible for founder, kidney and liver diseases, and bloat among feedlot cattle. None of the grain-fed steers had founder or kidney lesions. There were about 15 percent condemned livers—far fewer than the 40 to 80 percent reported by some feeders. Except for occasional instances, bloat occurred only with steers fed buffers.

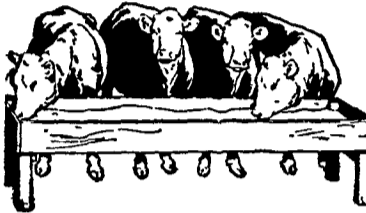
● **Open House**

(Continued from Page 1)

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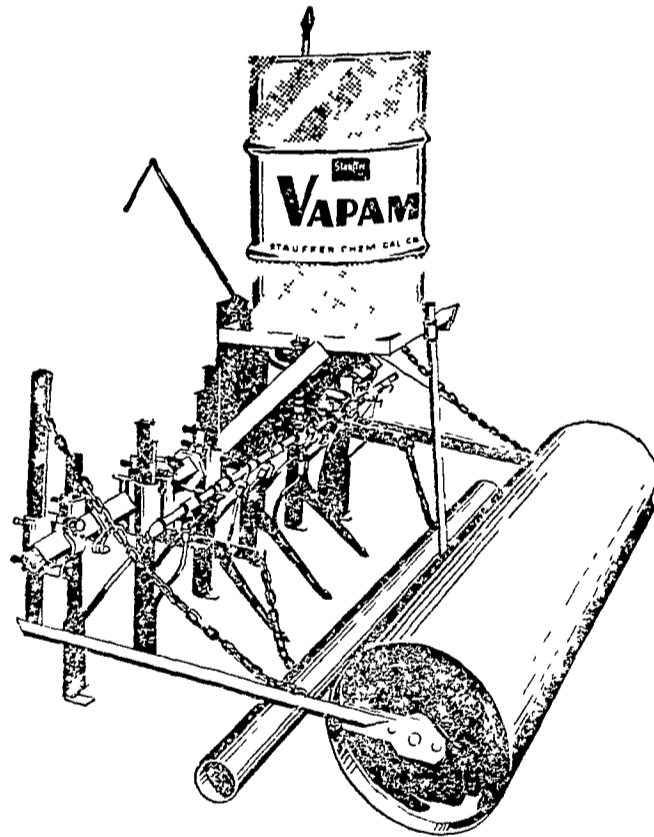
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FOUR YEAR RECORD

(based on actual field records of all participating farmers)

	1961	1962	1963	1964
SILAGE				
Fields	82	111	210	103
Ave Weight (tons per acre)	24.1	24.8	24.1	22.3
TDN (lbs per acre)	10,221	10,231	9,999	9,739
GRAIN				
Fields	93	62	51	59
Bu. Acre	108	117	109.2	106.9

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