

RESULTS OF EXPERIMENTS IN IMPROVEMENT OF PASTURES FOR DAIRY CATTLE

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Seven years' trials at the Illinois Station with pasture crops for dairy cattle have shown possibilities for greatly increasing (a) the length of the pasture season; (b) the yield of pastures; and (c) the length of time fresh green pastures are available, as compared with ordinary bluegrass pastures. These results have been accomplished through (a) selection of suitable, high-yielding pasture crops; (b) good grazing management; (c) adequate and regular fertilization; and (d) persistent weed control.

High-producing pasture crops studied in the trials were alfalfa, bromegrass, a mixture of Sudan grass and soybeans, sweet clover, and winter rye. It has been found advantageous to grow a number of these crops simultaneously in separate fields and to pasture them in rotation or when the crops are at their best stages for pasturing.

Application of a nitrogen fertilizer to bluegrass pastures increased (a) the nitrogen content and (b) the palatability of the grass. An explanation for the greater palatability of the fertilized grass is the higher moisture content of the fertilized crop.

A study of thirty-seven comparisons of the dry matter of bluegrass taken from fertilized and from unfertilized pasture plots shows that in all but four cases the grass from the fertilized plots was lower in dry matter content (and thus higher in moisture content) than the grass on the unfertilized area. Of these four instances two occurred in August of 1940, an unusually dry season, when pastures were almost bare. An analysis of the data by the method of Student indicates a statistically significant difference in the dry matter contents of the fertilized and unfertilized grass. A summary of the

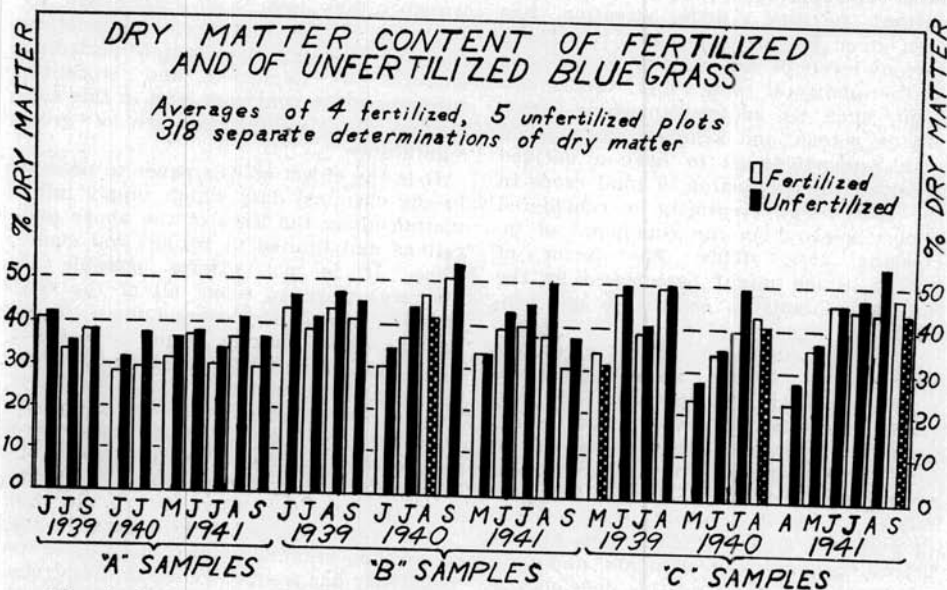


Fig. 1.—Over a 3-year period, fertilized bluegrass had a lower dry-matter content (remained greener) than unfertilized bluegrass.

data is presented in chart form in Figure 1. It is believed, therefore, that the main reason cattle select fertilized areas of pastures for grazing, in preference to unfertilized areas, is the higher moisture content of the fertilized crop. Other factors also may be operative, but these are believed to be of less importance than the dry matter content.

Further evidence that the dry matter content is the factor of principal importance in determining palatability of pasture crops is found in a study of the dry matter content of a number of pasture crops used in our trials. Samples taken during the months of April to September, inclusive, over a five-year period, show that bluegrass contains more than 30 per cent dry matter thruout a large portion of the pasture season, while a Sudan

grass-soybean pasture rarely reached 30 per cent dry matter. There is a close relation between dry matter content and palatability, the crops lowest in dry matter, as a rule, being most palatable. (Table 1.)

TABLE 1.—DRY MATTER CONTENT OF PASTURE SAMPLES

Crop	No. of determinations	Samples over 30 percent dry matter	
		Number	Per cent
Alfalfa.....	71	17	24
Bluegrass.....	389	359	92
Brome grass.....	30	9	30
Sweet clover.....	16	6	38
Sudan grass—soybeans..	38	1	3