



Marketing Montana hay  
by Raymond C Stack

A THESIS Submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree of Master of Science in Agricultural Economics  
Montana State University  
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**Abstract:**

In this study, an attempt was made to determine the adequacy of Montana's hay production relative to hay needs, describe the hay marketing practices within the present market structure, determine the relationship between hay prices and marketing factors, and consider the best way of evaluating hay for market purposes.

The annual production of hay in Montana is not enough to adequately meet the needs of the livestock industry, but very little hay is imported into the state, because of adjustments in hay use and the extent of shifting to alternative feeds.

Hay buyers did not reflect through prices paid any significant importance to quality, kind, or cutting of hay.

Hay is sold mostly in local markets, within a 15 to 20 mile radius by farmer-growers, to buyers who prefer to purchase hay at the time of immediate need. Neither buyers nor sellers have adequate market information to guide them in their transactions.

Sampling hay with a core sampler and analyzing the sample chemically is superior to the use of United States Grades as a method of evaluating hay.

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Errors of interpretation of data, presentation and omission are the full responsibility of the author.

## ABSTRACT

In this study, an attempt was made to determine the adequacy of Montana's hay production relative to hay needs, describe the hay marketing practices within the present market structure, determine the relationship between hay prices and marketing factors, and consider the best way of evaluating hay for market purposes.

The annual production of hay in Montana is not enough to adequately meet the needs of the livestock industry, but very little hay is imported into the state, because of adjustments in hay use and the extent of shifting to alternative feeds.

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Sampling hay with a core sampler and analyzing the sample chemically is superior to the use of United States Grades as a method of evaluating hay.

## PART I

### INTRODUCTION

#### Historical Background

Montana is richly endowed as a favored environment for the raising of grass. It was only natural that stock-raising became a major industry early in the development of the state. The early stockgrowers found that the deep draws and coulees of the area offered natural protection for the cattle and that grazing was good all during the winter months as the native grasses retained much of their nutrients when cured. The livestock industry developed from an estimated 50,775 head of cattle in 1870 to 274,316 head of cattle in 1880, and by 1886 this number had been raised to 663,716.<sup>1/</sup>

The catastrophic winter of 1886-87 did much to change the manner of raising livestock in Montana when the decline of large-scale ranching on the open range was started. The losses of cattle during the winter were severe. Numbers dropped from 663,716 in 1886 to 471,171 in 1887.<sup>2/</sup> In the spring of 1887 the carcasses of thousands of animals that were victims of starvation were strewn everywhere, especially in the draws and coulees which had been piled full of snow and caught the drifting cattle. A prominent cattleman, Granville Stuart wrote,

"A business that had been fascinating to me before, suddenly became distasteful. I wanted no more of it. I never wanted to own again an animal that I could not feed and shelter."<sup>3/</sup>

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<sup>1/</sup> Merrill G. Burlingame, The Montana Frontier, Helena, Montana, State Publishing Company, 1942, p. 283.

<sup>2/</sup> Ibid., p. 284.

<sup>3/</sup> Granville Stuart, Forty Years on the Frontier, Cleveland, Ohio, The Arthur Clark Company, Volume II, 1925, p. 221.

What hay was available was given, as a general rule, only to the bulls so that they would be in an improved condition for the breeding season.<sup>1/</sup> Changes in the methods of ranching in Montana were inevitably the result of the experiences of such winters as that of 1886-87 and of the coming of the homesteaders.

An early successful rancher, Pierre Wibaux, observed that if stock could be brought through the winter in good shape they would be ready for the market earlier in the fall. The firm of Grisby and Wibaux contracted to have hay put up in 1883.<sup>2/</sup> This was during the time when most ranchers still believed that cattle should shift for themselves the year around. Wibaux's methods paid out and he often topped the Chicago market.<sup>3/</sup>

Today, haying and livestock raising are almost inseparable in Montana. The value of Montana's hay production during the period 1947 to 1958 has averaged \$63,011,400 per year.<sup>4/</sup> Hay has grown from a humble start to the second most important place among crops in Montana.

#### The Problem Situation

According to Table I, the production pattern for hay has not changed significantly since 1947. In 1959, 61 per cent of all hay produced was

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1/ Donald H. Welsh, Pierre Wibaux, Cattle King, Montana State University, Missoula, Montana, 1950, p. 50.

2/ The Glendive Times, Glendive, Montana, July 14, 1883.

3/ Welsh, op. cit., p. 51.

4/ Montana Department of Agriculture, Montana Agricultural Statistics, Helena, Montana, United States Department of Agriculture, Agricultural Marketing Service Cooperating, Volume VII, 1958, p. 19.

TABLE I. ALL HAY IN MONTANA, ACREAGE, PRODUCTION, PRICE, TOTAL VALUE, VALUE PER ACRE.\*

Year	Acres Harvested	Production		Price per Ton Sold	Value of Production Dollars	Value per Acre
		Yield/Acre	Total Tons			
1948	2,203,000	1.23	2,704,000	21.60	58,406,000	26.51
1949	2,122,000	1.01	2,151,000	26.10	56,141,000	26.46
1950	2,432,000	1.12	2,730,000	24.20	66,066,000	27.17
1951	2,236,000	1.07	2,399,000	32.30	77,488,000	34.65
1952	2,510,000	1.12	2,804,000	28.50	79,914,000	31.84
1953	2,585,000	1.21	3,134,000	18.70	58,606,000	22.67
1954	2,436,000	1.20	2,921,000	20.00	58,420,000	23.98
1955	2,410,000	1.27	3,054,000	20.70	63,218,000	26.23
1956	2,230,000	1.21	2,700,000	22.70	61,290,000	27.48
1957	2,326,000	1.29	2,992,000	16.90	50,565,000	21.74

\*Source: Montana Department of Agriculture, Montana Agricultural Statistics, Helena, Montana, United States Department of Agriculture, Agricultural Marketing Service Cooperating, Volume VII, 1958, p. 19.

alfalfa, 17 per cent was wild hay, 12 per cent was clover and timothy hay, 7 per cent was grain hay and 3 per cent was classified as other. The high alfalfa producing counties are Big Horn, Blaine, Carbon, Cascade, Fergus, Gallatin, Lake, Madison, and Park. These counties combined accounted for nearly 35 per cent of the total alfalfa production in 1959. Alfalfa is produced largely on irrigated land in Montana. Clover and timothy hay is grown mostly in the mountain meadows of Beaverhead, Carbon, Granite, Madison, Meagher, Powell and Ravalli counties. Wild hay is grown in the mountain meadows of Beaverhead, Madison, Powell and Meagher counties as well as the plains area of northern Montana comprised of Teton, Glacier, Blaine and Phillips counties. The wild hay in the mountainous areas is mostly bluegrass whereas the wild hay of the plains is largely western wheatgrass. Grain hay is, of course, grown mostly in the dryland crop areas of Blaine, Chouteau, Hill, Phillips, Roosevelt, Sheridan, and Valley counties. (See Figures 1-5.)<sup>1/</sup>

Hay is grown as the only possible crop in some areas of Montana because of soil or climatic factors. The Big Hole Valley of Beaverhead County is a good example of climatic limitations. In other areas hay is raised as an alternative crop grown in rotation with other, perhaps more important crops.

The question now arises. Is the production of hay in Montana adequate to meet the needs of stockgrowers within the state? To answer this question an attempt was made to compute a hay-livestock balance for each county

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<sup>1/</sup> United States Department of Commerce, 1959, Census of Agriculture -- Preliminary, State of Montana, Bureau of the Census, Washington, D.C., August, 1960.

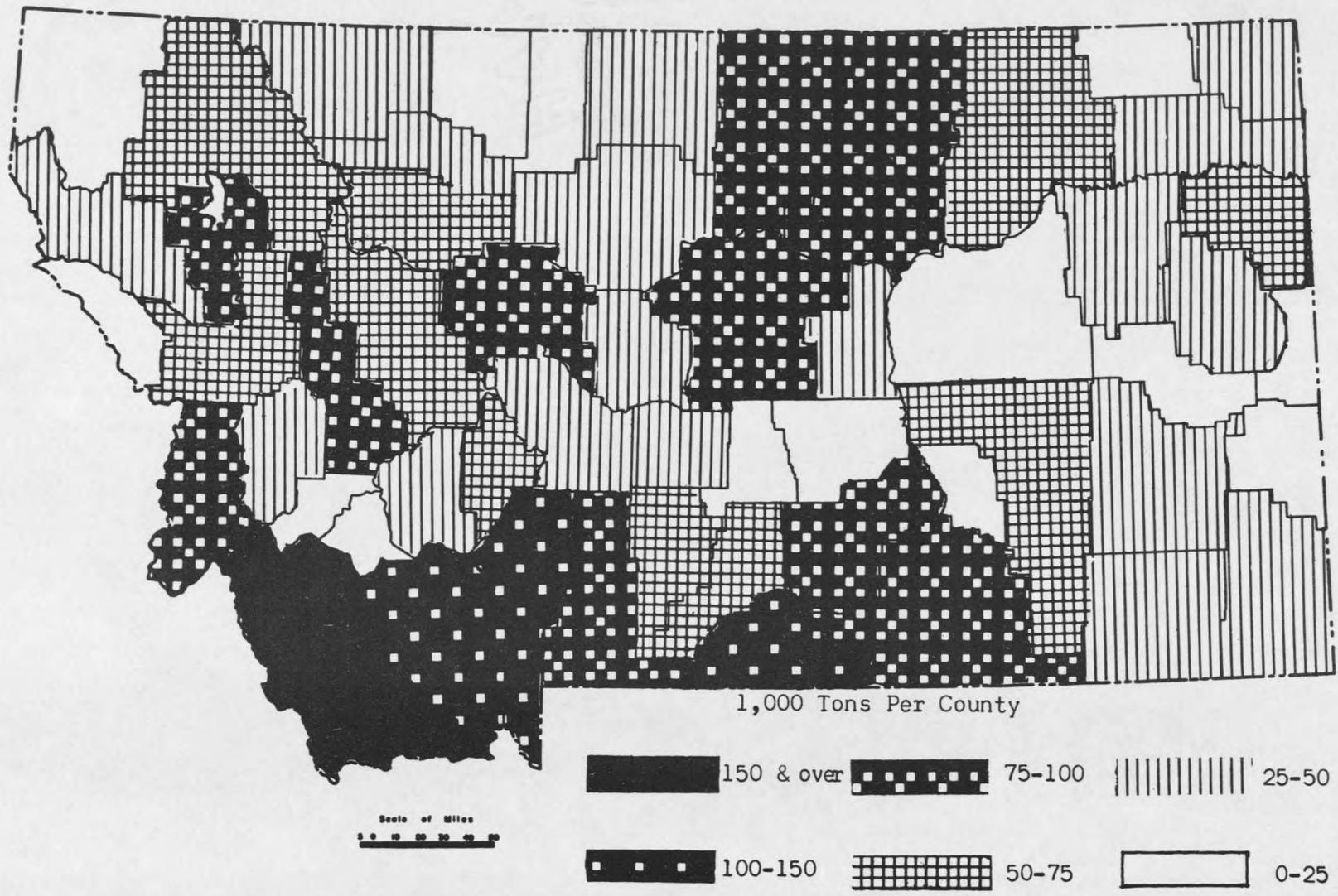


Figure 1. Annual Average Hay Production in Montana, 1947 to 1958.

Source: Montana Agricultural Statistics, op.cit.

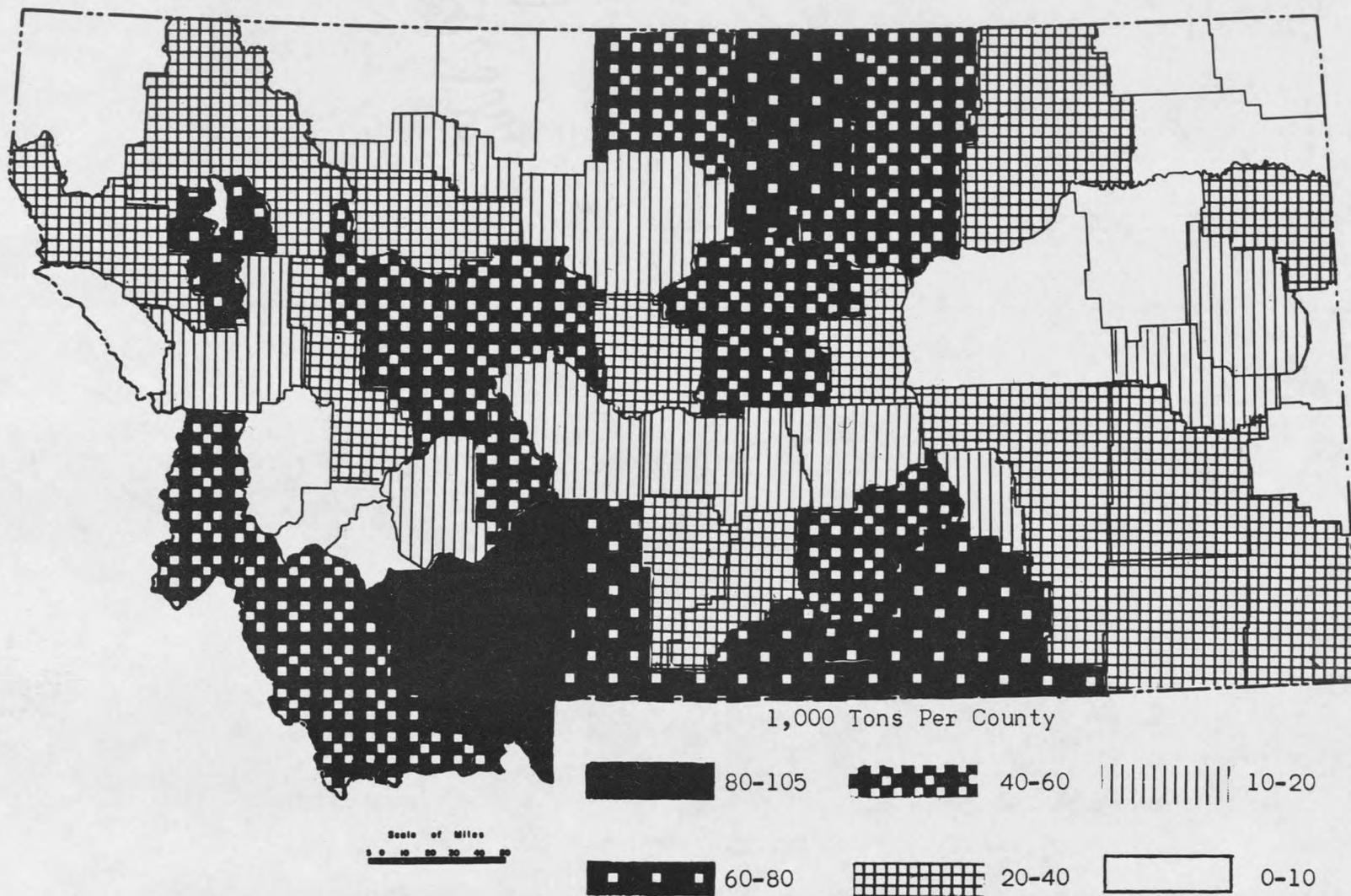


Figure 2. Alfalfa Production in Montana, 1959.

Sources: Census of Agriculture, op. cit.





















































































































