

# Forage Extension Program

## What is an Adequate Alfalfa Stand?

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Winterkill or “old age” afflicts thousands of acres of alfalfa in Montana each year. Both irrigated and dryland producers face the dilemma of maintaining an unproductive stand or rotating out of alfalfa for several years – and each of these options can be very costly. Many sub-economic alfalfa or alfalfa/grass hay stands are maintained, but all producers should prepare for proper rotations and flexibility of their forage acre base.

What is an economic stand? Most of the answer to this question lies in the goals of the individual producer. For cash hay growers in irrigated valleys, where alfalfa is a short rotation crop with other cash crops, a dense stand is very important for three to five years. Varieties grown in these situations typically have small crowns, and respond to dense seedlings and high management. At the other extreme, a productive dryland stand may have fewer than two vigorous plants per square foot. Dryland varieties such as ‘Ladak 65’ and the “creeping” varieties have broad, deep crowns that are adapted for production in extreme cold and dry climates.

For irrigated production, stands should generally have the following numbers of plants per square foot:

Fall, seeding year.....15-25  
First hay year.....10-15  
Second hay year.....6-10  
Third + hay year.....3-6

Counts should be taken when the spring alfalfa growth is 3 to 4 inches tall. These numbers were generated in the Midwest with many different varieties, and are reasonable guidelines for irrigated alfalfa in Montana. For dryland alfalfa ten years or older, one or two plants per square foot are acceptable as long as yields are good, and there are no objectionable weeds that reduce hay quality.

A second method of assessing stands has been developed in Wisconsin. By counting the number of stems per square foot, a better estimate of stand productivity is generated. In their tests with numerous varieties, the following yield data were generated:

Stems per square foot	Tons/A	%
10	1.3	22
20	2.3	37
30	3.3	53
40	4.3	69
50	5.3	84
60	6.3	100

Again, these numbers have not been tested in Montana, but this method will provide a reasonable estimate of stand and yield potential. For large crowns of Ladak 65, we have

found that a single plant (per square foot) had over 40 stems, so its yield potential is certainly better than one with only 20 stems.