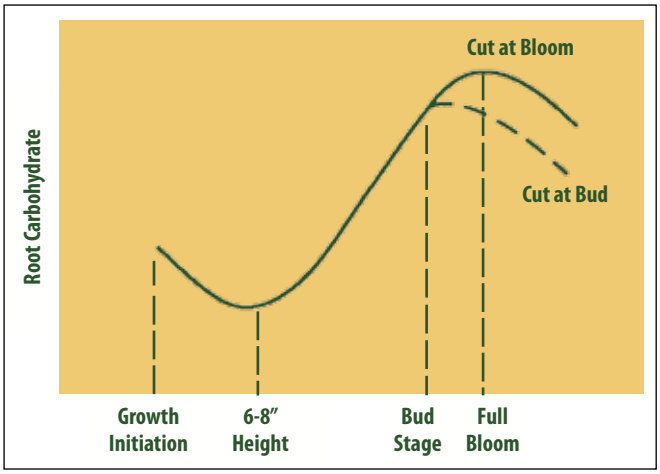
GUEST COLUMN

End of Year Alfalfa Management

Dan Undersander, Forage Agronomist and Professor Emeritus, University of Wisconsin-Madison

It is hard to think about getting ready for winter when temperatures are 80˚F but that is what we should be doing if we want to improve winter survival and next spring's alfalfa yield.

Figure 1. Root carbohydrate change after cutting.



First, we should think about managing alfalfa root carbohydrate levels for winter since now is the time we can influence them. The alfalfa plant uses carbohydrates stored in the root to regrow after cutting (Figure 1). Typically, root carbohydrates are drawn down for ~2 weeks after cutting, at which time the plant is large enough to produce enough carbohydrates to continue growth and replenish root reserves for the next regrowth cycle. Root carbohydrate concentration is maximized at full bloom. Cutting at the bud stage results in as much as a 25% decrease in root carbohydrate storage. High summer temperatures can further reduce root carbohydrate concentration due to increased plant respiration.

Thus, if all cuttings of alfalfa are taken at 28-day intervals or at bud stage, root carbohydrate content is replenished to a lesser extent after each cutting. An old recommendation is to let at least one cutting (preferably 3rd or 4th) go to flower to rebuild stand condition by increasing root carbohydrate levels. This is still a good idea for conventional alfalfa to improve winter survival and increase yield for 1st cutting next year.

It is important to point out – if one is growing HarvXtra® alfalfa and harvesting on a 35-day schedule or longer, the need for a delayed 3rd or 4th cutting is not necessary since more carbohydrates are placed back into roots with the longer harvest interval at each cutting. Trials have shown better winter survival and more rapid spring greenup from 35-day cutting intervals of HarvXtra® compared to continuous 28-day cutting intervals.

Secondly, we should think about fall (actually late-summer) fertilization to replace nutrients removed by alfalfa forage. Each ton of alfalfa dry matter removes ~14 lbs of phosphate (P_2O_5), 55 lbs of potash (K_2O), and 6 lbs of sulfur. Most dairy farms apply sufficient manure to supply enough phosphorus. However, we must pay attention to potassium and sulfur needs. If the last soil test showed potassium in the optimum range, then only apply potassium and sulfur to replace that removed by the forage. Multiply the tons of alfalfa (dry matter) harvested per acre this year by 55 lbs potash and 6 lbs sulfur to determine late-summer fertilizer application. Remember to apply 1 lb/ac boron annually. The late-summer fertilization will provide adequate potassium to enhance winter survival and for growth of 1st cutting next year. Late-summer fertilizer application should occur about September 1.

Thirdly, check fields for weeds and decide whether or not a fall application of herbicide would be beneficial. Alfalfa is competitive with many weeds if a dense stand is present, but winter-annual weeds can be especially problematic. They grow later in the fall and start growing early in the spring to cause stand thinning.

Some weeds, such as chickweed, can be highly competitive with alfalfa, causing stand loss and maturing ahead of alfalfa to lower the quality of 1st cutting. Heavy infestations of chickweed can also delay drying due to the high weed moisture content.

Additionally, some weeds will reduce forage palatability and have varying degrees of toxicity to cattle, horses, goats, and sheep. They include yellow rocket, field pennycress, henbit, purple deadnettle, curly dock, and cressleaf groundsel. One should assess the weed problem and then plan on a fall or dormant application of herbicide to control problem weeds.

If Roundup Ready® Alfalfa was planted, you can get broad-spectrum weed control and application flexibility with glyphosate, reducing potential crop injury or future rotational concerns.