



## Ben Beckman

*Beef Systems Asst. Extension Educator*

101 E Center P.O. Box 368

Hartington, NE 68739

[402-254-6821](tel:402-254-6821)

[ben.beckman@unl.edu](mailto:ben.beckman@unl.edu)

### Managing Late Season Alfalfa

A warmer than usual fall has kept plants growing and alive further into the year than we typically deal with. Add on a return of moisture to many areas that were dry this summer and the extra growth in cool season pastures has been a blessing. For those looking to capture the additional growth in alfalfa fields, this extended warm period may end up raising some management concerns.

Allowing for alfalfa to winterize before dormancy is a key factor preventing winter kill across a stand. Traditionally, my recommendation has been to time the last cutting for roughly 6 weeks before the first frost. The alfalfa plant needs 3 uninterrupted weeks to complete the transfer of carbohydrates to the crown and roots that is the winterization process. The additional 3 weeks in my 6 week recommendation is a safety measure, giving us a bit of cushion incase cold weather come early.

While this general guideline has proven its worth over the years, many producers would love to have a bit more accurate method to time last cuttings to. One way to narrow the no-harvest window down is by utilizing growing degree days (GDD). Work from Dan Undersander and Bill Bland at the University of Wisconsin calculated winterkill risk looking at GDD at a base 41°F accumulating until a killing frost of 25°F. The two GDD levels of importance for alfalfa stands were 500 and 200.

By providing at least 500 base 41°F GDD after harvest, research trials showed that there was sufficient time for alfalfa to winterize. If harvest occurred with under 200 GDD left, alfalfa plants did not have sufficient time to regrow and deplete carbohydrate reserves to a level that would negatively impact winterization. With this knowledge we can use climate data calculate the risk of winterkill or injury to the stand.

By looking at the probability of accumulating at least 500 GDD after a particular date at a certain location, then adding it to the probability of accumulating less than 200 GDD, we can come up with an accumulated risk of harvest. If you were to graph these probabilities out, you'd get a U shape, with less risk early in the season dropping as the chance of gaining 500 GDD lessens, then rising again as the chance of having less than 200 GDD increases. If you're wanting to time the last harvest date for alfalfa with more accuracy or are shooting for a right before frost cutting, it's worth taking a look at.

One other thing to consider in alfalfa fields that may still be recovering from dry conditions this summer is a fall irrigation. While not an option for every field, targeted fall irrigation may help the long-term strength of the stand.

Although alfalfa is drought tolerant with its deep roots, it uses a lot of water. A longer and warmer than typical fall means, alfalfa will continue to grow and use water, depleting the soil profile. Irrigation now can help maintain moisture on the soil surface, something necessary to prevent the roots from drying out and dying over the winter. A full soil moisture profile also means that soil temperature is better regulated through the winter, helping keep plants alive during the cold and initiating growth better in the spring.

While running the system one last time does have a cost, irrigating in the fall has a number of benefits. First, it occurs during a time when evaporation is very low. This means little of what we supply will be lost, with most going to late season growth or filling the soil profile for strong spring growth.

Second, with little water lost to evaporation or transpiration during plant growth, a depleted soil profile can be refilled for next year. In many alfalfa fields, the water supplied during the growing season may never reach beyond 4 feet, when the roots often stretch past 8 feet in depth. By padding the profile now in moisture depleted soils from this summer, we can minimize stress during high heat and high water demands next summer. One exception may be in coarse textured soils where water will move past the rooting zone before spring.

Finally, alfalfa fields that have soils with low infiltration rates may not be able to absorb enough water during peak use periods of the year, even when supplemented with irrigation. Having a full profile going into next year for these fields to start out ahead instead of playing catch-up is one more reason for fall irrigation if available.

If you haven't done so yet this fall, give your alfalfa stands some consideration. Look at base 41°F GDD to plan last harvest risk by going over 500 or under 200 GDD. In irrigated fields that may still be recovering from a dry, hot summer, consider fall irrigation to fill the profile for next year and protect plants this winter.

*-Ben Beckman is a beef systems Extension Educator serving the counties of Antelope, Cedar, Knox, Madison and Pierce. He is based out of the Cedar County Extension office in Hartington. You can reach him by phone: (402) 254-6821 or email: [ben.beckman@unl.edu](mailto:ben.beckman@unl.edu)*