



Hay Harvest Guidelines

PHOTO BY SHAUNA ROSE HERMEL

How are you managing one of your most valuable resources?

by Kindra Gordon

If putting up hay is a part of your cattle operation, you know it can be a process that requires critical attention to detail to produce the best quality forage possible. While weather, soil fertility and method of storage each plays a role, time of cutting appears to be the biggest player in quality hay production.

Timing is everything

Timing of the first cutting and late-season cutting can affect both hay quality and the health of forage plants. For the first alfalfa cut of the season, producers want to watch for flowering, height and maturity as indicators that stands are at prime quality for cutting. For instance, this would typically occur the last week of May to early June in the Dakotas.

But, South Dakota State University (SDSU) Extension forage specialist Vance Owens cautions that watching for flowering only — as many producers do — can be an inaccurate indicator. He says if an area has had a cool, wet spring, flowering will be delayed, but plants will still be maturing and ready for cutting even without the flowers. Owens says forage quality starts to decline by mid-June, so you want to make sure you make your first cut on time.

After that first cutting, a 28- to 32-day interval is generally needed between cuttings. As fall approaches, follow one of the golden rules for alfalfa harvest: Avoid cutting or grazing alfalfa while the plants prepare for winter.

Montana State University (MSU) Extension forage specialist Dennis Cash says this means allowing alfalfa plants to regrow from four to six weeks before the average first frost date until several consecutive days of killing frost in the low- to mid-20°F range. “In Montana, this translates to: Don’t cut or graze alfalfa between early August and mid-October,” Cash says.

He adds, “If you want an alfalfa stand to last more than three or four years, it is important to give plants this critical fall rest period.”

The theory behind this recommendation is that late-season cutting can interrupt the plant’s winter hardening process and

increase the risk of alfalfa dying or suffering winter injury.

Old concept, new varieties

According to Cash, it is a guideline first presented 40 years ago by former University of Wisconsin (UW) professor Dale Smith in his textbook *Forage Management in the North*, which cited research trials from the 1930s indicating the importance of not harvesting alfalfa from Sept. 1 to mid-October. Cash also credits his Montana colleague Ray Ditterline who has preached a similar message for more than 30 years.

But, does this cutting guideline hold true for today’s newer alfalfa varieties? Most definitely, says Cash, who has conducted cutting schedule research trials with new alfalfa varieties since 2000. “We have basically re-proven the concept,” he says.

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Tips for better bales

If you don’t want to lose forage quality once a bale is made, consider using plastic net wrap rather than twine. That’s according to a two-year University of Wisconsin (UW) study that found three reasons why net wrap outperforms twine.

Reason 1: Net-wrapping is faster than twine-wrapping, which leads to greater productivity. The study found that 32% more bales were formed per hour with net wrap than twine.

Reason 2: Harvest losses (hay dropping out of the bottom of the baler) are lower when using net wrap because of the shorter time needed for wrapping.

Reason 3: Net-wrapped bales also have lower storage losses during outdoor storage compared to twine-wrapped bales (7% vs. 11%, respectively). Researchers say this is because net-wrapped bales shed water better if they are stored on well-drained areas.

Any round baler can be equipped with net wrap. The equipment costs \$3,000 to \$4,000, and plastic net is 75¢ to \$1 per bale more expensive than twine, but these UW researchers concluded it is worth the gain in forage quality and efficiency.

If you do use twine, however, study results suggest using plastic twine since sisal twine tends to rot.

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Cash reports that in a three-year, irrigated trial in Montana, half of the alfalfa plots were managed “normally” with three cuttings — two harvests by Aug. 1 and a third in mid-October. The remaining plots were managed “intensively” with four cuttings. They had the same three cutting dates as the first trial, plus an additional harvest Sept. 1 during the critical fall hardening period.

In the third year, 2003, the average yield of 18 varieties was 4.37 tons in the normal plots and 2.68 tons in the intensive plots, indicating a yield reduction of 39% in plots with four cuttings, with harvest costs making the fourth cutting an even bigger loss.

“It is not that the intensively managed trial was cut an extra time, it is the timing of when it was cut,” Cash says. “In our region, cutting alfalfa around that critical fall hardening period is a poor time to cut — even if that’s your first cut of the season — because of the impact on plant viability. From our research, new varieties don’t seem to respond any differently to this time of cutting than older varieties,” he says.

More proof from Colorado

Based on research he has conducted in

western Colorado, Colorado State University (CSU) Tri River Area Cooperative Extension agent Bob Hammon concurs with Cash, and says, “Timing of final cutting makes an impact on stand health.”

He explains, “After cutting, initial plant regrowth, up to a certain point, is not fueled by photosynthesis, but by the carbohydrate reserves in the roots.” Based on this, he explains, if alfalfa is cut too late in the fall, root reserves are depleted for regrowth without enough time to store adequate carbohydrates in the roots for spring.

“Then, in the spring, nematodes often begin to attack a plant that is already stressed,” he adds.

Hammon says, “I have no doubt that the multiple stress of cutting schedules combined with stem nematodes impacts plant growth and performance. Plants may be able to handle one stress, but adding the second stress really weakens the plant.”

So, should producers give up that additional cutting? While he is still in the middle of the study, Hammon says preliminary results indicate that skipping the fourth cutting can increase the following year’s first cutting yield by 20%-30%.

He admits it can be difficult for a grower to look at that extra cutting and not use it, but offers this suggestion, “Look outside the box. Usually after Nov. 1 in our region, plants are dormant, and a producer can come back at that time and either make a fourth cutting if conditions are right or use it for livestock grazing.” He explains that harvesting the forage when it is dormant does not deplete root reserves.

Cash suggests the same to growers in the North. “You can maybe take two or three cuttings ahead of that critical rest period and then take an extra cutting after the killing frost. Here, that is a miserable time to put up hay, so many of our producers usually graze the fall regrowth.”

As a starting point, Hammon suggests producers taking a late-season fourth cutting this fall, leave a small patch uncut, and see the regrowth and yield results for themselves next spring.

Cash and Hammon both say these late-season cutting guidelines are geared for producers who want to maximize alfalfa stand life. “If you are a cash producer who is replanting stands every three years, these guidelines may not be economical,” Hammon says.

