August is Here: Time to Think About Summer-Fall Planting of Alfalfa & Other Forages

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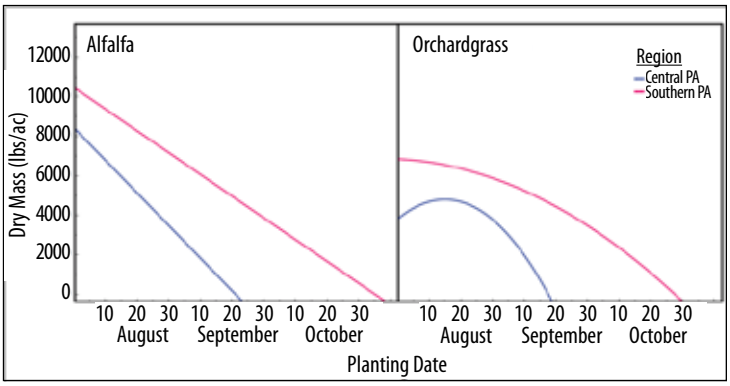
Late summer seeding can result in successful establishment of alfalfa and grasses. This timing fits into cropping systems, such as following small grain, pea, or sweet corn. It also can work for reseeding alfalfa if more than a month has gone by since an old alfalfa stand has been terminated and tilled. Summer seeding also avoids many of the weed problems associated with spring seeding of legume-grass mixtures where weed control options are limited. For successful establishment, adequate soil moisture must be present, a firm seed-bed established, and adequate time for plants to survive the winter. Seedings of vigorous legumes like alfalfa should be done ~6 weeks before the average date of killing frost, while less vigorous legumes and grasses should be planted 8 weeks before a frost. This is typically from July 15 to August 1 in central to northern regions of Minnesota and Wisconsin and from August 1-15 in the south. Perennial grasses should have a minimum of 4 leaves before frost, while alfalfa should have 6 true leaves. For legumes and grasses, the crown and root system should be developed to survive the winter and frost heaving.

Time of seeding also affects yield the following year. Work by Marvin Hall (J. Prod. Agric. 8:233) in Pennsylvania showed a significant effect of seeding date on alfalfa and grass yields the following year (Figure 1). For each day delay following August 1, alfalfa forage yields declined 158 and 116 lbs/ac in central and southern Pennsylvania, respectively. Although the location latitudes are less than important Midwest forage growing regions, results clearly show advantages of early plant development in the late summer-fall on yields the following spring.

Figure 1. Changes in forage dry matter yield of alfalfa and orchardgrass in the year following seeding as affected by different planting times during the late summer and early fall in central and southern Pennsylvania.



Annual Grasses for Extending the Grazing Season

Annual grasses can be used to provide forage in grazing systems. In a Minnesota grazing study conducted over several years with multiple grazings from September to November, annual ryegrass (varieties Gulf or Jumbo) seeded in August had high forage quality and was among the highest-yielding grasses (Table 1). If a single hay harvest had occurred in November and the impact of grazing removed, yields could be 50% higher. In Wisconsin, oat and wheat yielded nearly 2.5 and 1.2 tons/ac respectively (fyi.uwex.edu/forage/grazing-management-for-fall-grown-oat-forages/). While annual rye and spring grains typically winterkill, winter rye will overwinter and provide living ground cover throughout winter and regrow for spring grazing.

Table 1. Forage yield crude protein (CP) and neutral detergent fiber (NDF) for annual cool-season grasses grazed by horses.

Species	Yield (tons/ac)	CP (%)	NDF (%)
Annual ryegrass	1.9	30	42
Spring barley	1.4	30	45
Spring oat	1.5	21	43
Spring wheat	1.4	29	55
Winter rye	1.5	35	50
Winter wheat	1.5	31	41
SE	0.1	1	45

Source: Grev et al., (2017). Agron. J. 109: 1-12

Figure 2. Annual ryegrass is a high-yielding, high-quality forage, preferred by grazing horses.

Fall Cutting of Alfalfa

Although we have been discussing fall cutting of alfalfa for years, it is important to periodically review its importance in terms of affecting stand persistence. We have no control of the increasingly variable weather conditions, but we can reduce risk of winter injury through cutting management. We have attempted to present fall cutting decisions based on relative risk of alfalfa winter injury (agronomy.org/files/publications/alfalfa-management-guide.pdf). In summary, for much of the Midwest, it is

least risky to not cut beyond early September. This scenario allows plants to regrow, rebuild carbohydrate reserves, and retain stubble to catch snow, protecting soil from freeze-thaw cycles. Cutting at the time of the first killing frost is the next least risky scenario because alfalfa does not have time to regrow or use any root carbohydrates, but valuable stubble is removed.

These are general guidelines, but a new, more precise system of scheduling fall harvests is to use Growing Degree Days (GDD) as an indicator. A review of the GDD approach by Dan Undersander in Wisconsin (ipcm.wisc.edu/blog/2012/10/late-summer-cutting-management-of-alfalfa-2/) shows alfalfa needs 500 GDD ([(maximum temperature – minimum temperature) ÷ 2] minus 41°F), accumulated after the last summer cutting before a killing frost of 24°F to regrow sufficiently to minimize winter injury. Therefore, the date of the fall cutting, varying with location, is probably less important than air temperature. For example, if a warm fall exists following a cutting in mid-September (normally a risky time for southern Minnesota), the risk of winter injury is probably lessened. In addition, Undersander shows that a fall cutting in the last half of September is the riskiest at most locations because alfalfa plants regrow but there is insufficient GDD to allow the plants to accumulate reserves to overwinter.