A New Concept in Fall Harvesting of Alfalfa in the North

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Many alfalfa (*Medicago sativa* L.) producers are very hesitant about taking a harvest after late August for fear of winter injury/winter kill occurring. As a result, many alfalfa fields in North Dakota and northwestern Minnesota are not harvested during the fall (September or October) even though significant growth may occur. An observation in 1999 noted that alfalfa harvested when the regrowth structures had reached about 7 to 8 cm during mid September had less injury than alfalfa harvested following a killing frost in late October. Therefore, our objective has been to evaluate harvesting alfalfa in the fall whenever regrowth is well initiated.
FMA-01 had three treatments on 'Vernal' alfalfa; three cuts at early bud, late bud, and 30% bloom; four cuts with the fall cut following a killing frost; and four cuts with the fall harvest when the regrowth reached 7 to 8 cm. WKA-04 had three cuts at the same maturity as FMA-01 and four cuts when regrowth was initiated but used AmeriStand 201 + Z and WSI 3.0 cultivars.
Forage yield was 11% greater with fall harvest when regrowth was initiating than with no fall harvest (3 cuts) and was slightly greater than when harvested following a killing frost in the FMA-01 experiment. Likewise, forage yield was 22.3% greater with fall harvest than no fall harvest in the WKA-04 experiment. The greater yield in WKA-04 compared with FMA-01 appeared primarily related to the greater yield in the seeding and first years of the experiment. Varietal trials harvested at initiating of regrowth in the fall have not experienced significant winter injury during the last four years. Harvesting during the fall when regrowth is initiating increased the forage quality compared with harvesting following a killing frost (data not presented). Plant density between fall and no fall harvest treatments in WKA-04 during the spring of the fourth harvest year were nearly identical for both cultivars, but weight of 16-cm root segments, and crown and spring growth were less in fall-harvested treatments. We conclude that harvesting in fall when regrowth is initiating is a practice to consider.

Table 1. Seasonal forage yield with/without fall harvest at Fargo, ND.

Treatment	Production year				
	Mg ha^{-1}				
	FMA-01				
	2nd	3rd	4th	5th	Total
3 cuts by 10 Aug.	14.1	11.5	12.9	12.3	50.8
4 cuts, killing frost	15.9	13.2	11.7	14.8	55.6
4 cuts, regrowth initiating	15.2	13.6	11.7	15.9	56.4
LSD 0.05	0.4	0.8	1.5	0.8	
	WKA-04				
	Seeding	1st	2nd	3rd	Total
3 cuts by 10 Aug.	3.9	13.8	11.8	10.9	40.4
4 cuts, regrowth initiating	7.6	17.3	12.9	11.6	49.4
LSD 0.05	0.4	2.1	0.9	NS	