Fall Harvesting of Alfalfa has Economic Advantage in North Dakota
Dwain W. Meyer and Robert Nudell
North Dakota State University; Fargo, ND 58105

Introduction
Many alfalfa (Medicago sativa L.) producers are very hesitant about taking a harvest after August for fear of winter injury/winter kill occurring. As a result, many alfalfa fields in eastern North Dakota and western Minnesota are not harvested during the fall (anytime during September or October). If a fall harvest can be taken without extensive winter injury/winter kill occurring, greater economic return would be possible from alfalfa acreage.

Objective
Evaluate if a fall harvest should be recommended on short-term alfalfa stands.

Materials and Methods
✓ Location: Fargo, North Dakota: Fargo clay soil
✓ Four experiments:
  - AM-95: 12 cultivars (Spredor 3, Travois, Vernal, W.1.252 HQ, Sterling, Legendairy, 1452 Mt, 5246, Magnum IV, 631, and HayGrazer)
  - FMA-01: Vernal
  - WKA-04: AmeriStand 201 + Z and WSI 3.0
  - AMF-05: AmeriStand 201 + Z
✓ Treatments:
  - 3 cuts by 15 August @ early bud, late bud, and 30% bloom
  - 4 cuts @ early bud, late bud, 30% bloom, and 50% bloom/regrowth initiating or killing frost (KF)

Results
✓ Forage yield of the fall-harvested alfalfa (4 cuts) was 2.7, 5.6, 9.0, and 4.0 Mg ha⁻¹ higher yielding than the 3-cut checks in AM-95 (Table 1), FMA-01 (Table 2), WKA-04 (Table 3), and AMF-05 (Table 4) experiments, respectively.
✓ Crude protein, acid-detergent fiber, neutral-detergent fiber, and relative feed value of the 3- and 4-cut treatments in each harvest of WKA-04 in 2007 were not significantly different (data not shown).
✓ Forage yield of alfalfa performance trials have average 8.0, 16.0, 14.9, and 14.9 Mg ha⁻¹ in the seeding, first, second, and third years with two cuts in seeding year and four cuts (fall harvest) in subsequent years. Significant winter injury occurred only once in 7 years. When winter injury occurred, the 3-cut system yielded 9.3 Mg ha⁻¹ while the fall-harvested plots yielded 8.6 Mg ha⁻¹.

Conclusions
✓ Fall harvesting of alfalfa has had an economic advantage (greater yields).
✓ Over wintering residue (Fig. 1) did not affect quality in 2007.
✓ Fall harvest recommended only when a persistent cultivar used, short-term stands, soil fertility high, and the plant has reached 50% bloom or regrowth initiating from the crown reaches about 7 to 8 cm.

Additional information at http://www.nal.usda.gov/far western/forage/alfalfa.html