## FORAGE RESEARCH UPDATES

## **MINNESOTA**– Alfalfa & Red Clover Summer Seeding Craig Sheaffer, Jared Goplen, University of Minnesota

ummer seeding alfalfa and red clover following annual crop harvest is an effective alternative to spring seedings. Summer seeding allows additional economic returns from short-season annual crops like small grains and field peas, and allows legumes to establish during cooler fall temperatures with less weed pressure compared to spring-seeded legumes. We determined the effect spring small grain crops, field peas, and flax had on summer-seeded alfalfa and red clover populations and forage yields in the following year at Empire, Lamberton, Waseca, and Becker, MN. Following grain and straw harvest around August 1, legumes were no-till seeded (60 seeds/ft<sup>2</sup>) into crop stubble on August 15 without herbicides. Although red clover is noted for high seedling vigor,

we did not observe a consistent difference in fall populations between the two legumes (Table 1). Fall alfalfa populations were less for alfalfa following field pea. Average alfalfa yields in the following year were greater than red clover. Alfalfa yields were lowest following field pea and oat, likely because volunteer oat and field pea suppressed seedling growth in the fall. When compared to alfalfa yields previously reported from the same locations, summer-seeded alfalfa yields the year following seeding were equal to or greater than springseeded alfalfa (Sheaffer et al., 2014).

 Table 1. Alfalfa and red clover populations in the fall following seeding into five spring grain crops as well as forage yields the following year. Alfalfa and red clover were seeded approximately August 15.

	Fall populations (plants/ft <sup>2</sup> )		Yield (tons DM/ac)	
Spring Crop	Alfalfa	Red clover	Alfalfa	Red clover
Oat	31	22	3.9	3.5
Wheat	31	29	4.6	3.5
Barley	33	24	4.5	3.7
Field pea	20	23	3.6	3.2
Flax	33	25	5.1	3.5
Average	30	25	4.3	3.5

## **Key Findings:**

- Summer seeding alfalfa and red clover is an effective establishment method following a variety of spring-seeded grain crops. Adequate moisture is the key to establishment success.
- Alfalfa has greater yield potential than red clover.
- Annual grain crops should be selected based on potential economic return as all can result in good legume establishment and yields if significant shattering during harvest does not inhibit legume growth.