No-till planting radish seed into standing wheat stubble

NUTRIENT MANAGEMENT guide

Tall Fescue Grown for Seed

A nutrient management guide for western Oregon

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the need for N fertilization. Both the amount of N immobilized by straw in a first-year stand and the N available from decomposition in a third-year stand are small (0 to 20 lb/a). Thus, tall fescue fields have the same N requirement, regardless of whether straw is removed or chopped back.

Spring application

Spring N application commonly increases seed yield by 300 to 900 lb/a compared to no spring N application. Maximum tall fescue seed yield is produced with at least 100 lb N/a in the above-ground portion of the plant at harvest (Figure 9). This amount of N is supplied by the soil and through spring fertilizer application. The increase in yield and N shown in Figure 9 is similar to the line representing increasing seed yield with spring N application in Figure 10.

Spring N rate. Prediction of spring N rate from a soil test, such as that used for soft white winter wheat in western Oregon or for perennial ryegrass seed production in New Zealand, is not currently possible in Oregon. More information is found in Appendix A, "Inability of the Nmin Soil Test to Predict Spring N Rate for Tall Fescue" (page 24).

To adequately supply N for tall fescue seed production, apply 100 to 140 lb N/a in the spring.

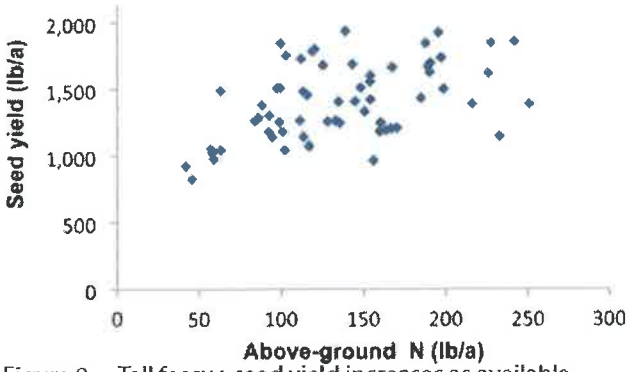

Figure 9.—Tall fescue seed yield increases as available N increases until the plant accumulates approximately 100 lb N/a in the above-ground biomass. Figure by John Hart.

This spring N rate recommendation is made assuming that 30 to 40 lb N/a was applied in the fall (see "Fall application," page 9).

Research in grower fields supports the recommended spring N rate of 100 to 140 lb N/a (Figure 10). In research from 1998 to 2005, spring N rates below 100 lb/a produced top seed yields in 10 of 13 situations. None of the sites receiving fall N required more than 135 lb N/a in the spring to produce maximum economic seed yield.

Nitrogen rate varies from field to field, but is relatively consistent from year to year within the same field. Southern Willamette Valley fields generally require less N than well-drained, irrigated fields in other areas of western Oregon. Our assumption is that poorly drained soils with more than 5 percent organic matter supply more N than well-drained soils with lower organic matter. Therefore, use lower N rates for poorly drained soils.

Timing of spring application. Tall fescue begins growth earlier in the spring than other grass species. Forage-type perennial ryegrass begins spring growth after accumulation of 200 GDD, typically in mid-February. Turf-type tall fescue normally begins growth 3 to 7 days earlier than forage type perennial ryegrass, while forage-type tall fescue begins growth 6 to 12 days earlier than forage-type perennial ryegrass (Figure 11).

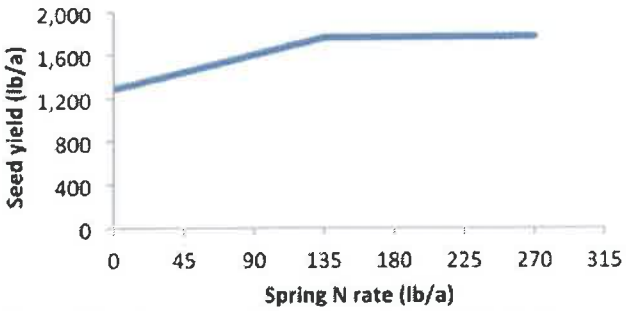

Figure 10.—Average tall fescue seed yield from three sites for 3 years (1998 to 2000) increased approximately 500 lb/a as spring N rate increased to 135 lb/a. Additional spring N did not increase seed yield. Data from Young, Mellbye, et al. (2003); figure by John Hart.

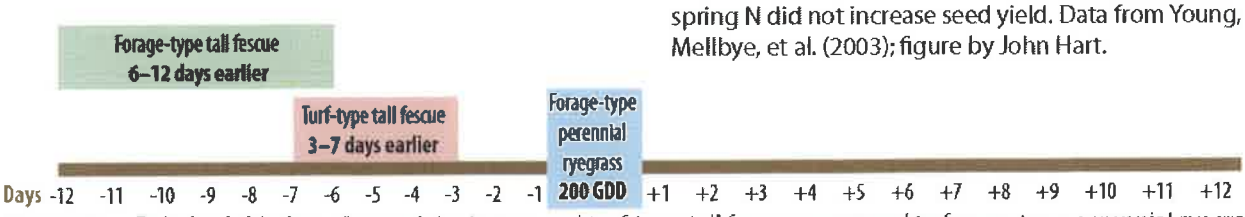

Figure 11.—Relative initiation of growth by forage and turf-type tall fescue compared to forage-type perennial ryegrass. Figure by Teresa Welch.