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SOILS AND CROPS

Plots evaluate cover crops in warm-season perennial pastures

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There is an opportunity to use cover crops in warm-season perennial grass (WSPG) pastures during winter dormancy. Unfortunately, there is little information on how some of the newer, more novel or exotic cover crop species can be adapted to the Southern Great Plains or if they can work in this system.

In fall 2014, we began working on demonstration plots of various cover crops overseeded into WSPG. Plot locations were southwest of Gainesville, north of St. Jo, southeast of Rosston and south of Forestburg, which are all in north Texas.

Entries in fall 2014 and spring 2015 included barley, oat, black oat, triticale, rye, wheat, ryegrass, corn, sorghum, sorghum sudan, sudan, pearl millet, foxtail millet, browntop millet, proso millet, chickpea, spring pea, winter pea, chickling vetch, common vetch, hairy vetch, lentil, sainfoin, alfalfa, cowpea, soybean, mung bean, guar, sunn hemp, radish, collard, turnip, mustard, rape, flax, buckwheat, phacelia, plantain, safflower, chicory, sunflower, sugar beet and clovers (crimson, berseem, Persian, rose, red, white, sweet, subterranean, alsike, arrowleaf and alyce. Additional entries of Japanese millet, teff, balansa clover, faba bean, okra, medics (burr, rigid and button), and a comprehensive mixture were added in fall 2015 and spring 2016.

In spite of dry weather and insect damage in fall 2014, we observed that the sorghum species entries were able to establish and grow in the fall prior to frost even with competition from the WSPG. Sorghum species entries were also some of the few plots that had good growth after the spring 2015 planting, when abnormally wet weather hurt the growth of most other plots.

While most entries did not perform well in fall 2014, many of them made significant growth in late winter and early spring 2015. Perhaps much of

the seed lay dormant in the ground until winter, when enough moisture was finally available for germination. Entries that made significant late winter and early spring growth included the small grains, ryegrass, vetches, peas, crimson clover, flax and chicory. We were surprised none of the brassicas performed well.

In fall 2015, cowpea, sunflower and grazing corn made significant growth even though they were terminated by frost a few weeks after planting. Others that made good fall growth were the small grains, ryegrass, peas, vetches, lentils, alfalfa, several of the clovers, faba bean, flax, chicory and the mix plot. The biggest surprise of these was the faba bean. It is a true cool-season bean that is tolerant of light freezes and may overwinter in north Texas and points further south. Again, we were surprised none of the brassicas performed well. It could be said they were hit or miss with more miss. Again, the sorghum species made significant growth when planted in spring 2016. Others that did well when planted in spring 2016 were peas, cowpeas, soybeans, sunn hemp, flax, buckwheat, chicory, plantain, okra and the mixed plot. However, all of these were soon choked out by the WSPG.

In the coming year, we plan to continue to evaluate species that have performed well in the plots so far. Since it is difficult for the cover crops to establish and compete with the WSPG while it is growing, we will concentrate on cool-season entries that grow during the WSPG dormant season. We will plant near the time of first frost but will shift the spring planting to a late winter planting. The species we will continue to evaluate in this system include triticale, oat, rye, wheat, barley, ryegrass, pea, vetch, lentil, faba bean, radish, mustard, flax, chicory, plantain, button medic and the clovers (crimson, Persian, rose, red, sweet and white). In the future, we also hope to evaluate mixtures of these. ■