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Soil Temperatures Restrict Options for Seeding Small Grains

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LUBBOCK – This year’s weather-delayed cotton harvest on the South Plains also delayed many producers’ plans to seed small grains for grain, forage or hay. They may be wondering whether it is too late to still seed a small grain crop, said a Texas A&M agronomist.

“Small grains such as oats and barley require a minimum average daily soil temperature of 45 to 50 degrees Fahrenheit for good germination and adequate stand establishment,” said Calvin Trostle, Texas Agricultural Extension Service agronomist at Texas A&M’s Research and Extension Center here. “But our soil temperatures on the South Plains have been cooler than normal since about Nov. 20.

“In fact, the average daily soil temperatures at a depth of four inches has been at or below 45 degrees. Producers can check average daily soil temperatures for several South Plains locations on the Internet at <http://achilleus.tamu.edu/data/data.html>” Wheat is more cold tolerant than oats or barley, and can produce an adequate stand if it is seeded when soil temperatures are as low as 40 degrees. Even so, late-planted wheat has less time to meet its vernalization (cold) requirement and establish a good root system, the agronomist said.

“Wheat yield potential declines steadily with later plantings. You can achieve fair yields from wheat seeded as late as mid-December with favorable soil temperatures, but it has far less potential to dollar-out and produce good net economic returns,” Trostle said. “Rye is more cold tolerant than wheat. The soil temperature planting guides that apply to wheat also work well for rye.

Oats achieve adequate germination and stands when the soil temperature is 50 degrees. Lower soil temperatures hinder germination, leaving some of the seed dormant in seeded ground until the soil warms up.

“It’s unlikely that our soil temperatures will warm back up to 50 degrees in December, so we are well past the optimum planting window for oats,” Trostle said. “Oats seeded in cool soils are also susceptible to rot, if soil moisture is ample. Even if it does germinate, cold temperatures will likely retard its growth.

“Growers who seed wheat, oats or other small grains in cold, wet soils should consider using a seed-applied systemic treatment such as Apron or Metalaxyl to reduce the odds of seedling disease.”

Producers who want to plant small grains for spring grazing or haying still have some options, the agronomist said.

Oats can be planted for forage in early February as far south as Lamesa, and in mid-February in the Plainview area, once soil temperatures warm back up to 50 degrees. Oats planted this late will have almost zero grain yield potential, Trostle added.

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“Another option is to seed oats in late January, within about two weeks of warmer soil temperatures. If the soil isn’t wet enough to induce rot, the seed will set its own time for germination,” he said. “Wheat could also be planted this late, but it won’t produce as much forage as oats.

“A good seeding rate for irrigated oats is about three bushels, or 90 to 100 pounds, per acre. Two bushels, or 60 to 65 pounds, per acre is a good dryland seeding rate.”

Walken is probably the most popular variety of oats for forage production on the South Plains. It is cold tolerant, and achieves a medium height, but takes longer to reach maturity than other regionally popular varieties such as Chilocco and Troy.

Chilocco is dual-purpose variety that produces grain and forage, if planted early, while Troy is considered only a spring oat. Chilocco and Troy mature about two weeks earlier than Walken. If Walken is cut for hay past the boot stage – when the highest forage quality exists – harvest can extend into late June, the agronomist said.

“Growers should check seed availability with local dealers, especially if they plan on planting in February. Stocks of Walken are currently low,” he said. “Prices vary, but Walken currently costs about \$10 per 50-pound bag. Chilocco is currently priced around \$9. The cost of Troy should be similar to Chilocco.

“Producers who are interested in planting awnless wheats for grazing or haying should consider varieties such as Lockett, Longhorn, and TAM 109 – an awnless variety similar to TAM 101. Russian Beardless is another option, but the generic seed currently available may, in fact, have some small awns.”

Regardless when small grains are planted for forage, producers should balance forage quality against yield when they make grazing and haying decisions.

“All forages – from winter small grains to summer sorghums and sudans – achieve maximum forage quality at the boot stage,” Trostle said. “On the other hand, maximum yields are achieved as the crop heads out – through about the soft dough stage. But the quality of forage harvested at this time is substantially lower than during the boot stage.”

Producers who want more information about small grains and other forage crops may contact their local TAEX county agent, or they can call Trostle at 806-746-6101. Additional small grains and forage information for Texas may be accessed at the Texas A&M Dept. of Soil & Crop Sciences website, <http://soil-testing.tamu.edu>

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