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South Plains Farmers Should Not Delay Grain Sorghum Irrigation

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LUBBOCK – Once again, it's a scorcher on the Texas South Plains. High temperatures have consistently reached 100+ degrees for several days. As a result, young grain sorghum crops are in desperate need of a good drink of water.

“We have observed numerous fields in the Panhandle and South Plains that are now very dry in the top nine to 11 inches of soil. Hot weather has only made that situation worse,” said Calvin Trostle, Texas Cooperative Extension agronomist based at Lubbock. “Young grain sorghum is especially susceptible to this stress because it has not yet rooted deep enough to reach soil moisture that lies below the top soil layer.

“If you have young sorghum in this condition, we suggest at least a three-quarter inch irrigation, as soon as possible. If you were planning on watering on a limited irrigation schedule, it would be wise to borrow some of the future water and get it out to the young crop now.”

An optimal time for the first watering in a limited irrigation schedule is 30 to 35 days after the crop has emerged, just before the growing point switches from producing leaves to reproductive growth.

“This is the growing point differentiation growth stage. It normally occurs when plants have seven to eight mature leaves, when they are about 12 to 14 inches tall,” Trostle said. “Irrigation at this time will help the growing point retain its capacity to set a high number of spikelets, which can lead to more flowers later on. More spikelets and flowers boost head size and yield potential.”

Texas A&M irrigation research indicates that it normally takes about six inches of irrigation water to produce a good grain sorghum crop. Other research indicates that each additional inch of water applied to grain sorghum can return 350 to 450 pounds of additional grain; depending on the hybrid grown, irrigation timing, and how the water is applied.

Grain sorghum is thirstiest just before, and during, the boot growth stage. This normally occurs 40 to 50 days after the crop emerges. Later, when the crop reaches the grain fill growth stage, it's thirst begins to taper off.

Trostle offered these tips to help producers gauge their sorghum water needs:

1) If you have doubts about whether to start watering, ask your crop. Check its top soil moisture and observe how it looks around 4:30 p.m. Does it recover near sunset?

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2) Remember the amount of time it will take to water the entire field. Plants that do not appear stressed today may become stressed in the two to three days it takes for a center pivot to make its way around the entire field.

3) If you have a substantial investment in fertilizer or other inputs, withholding irrigation at a key time reduces the fertilizer's ability to nourish plants and foster grain yield.

4) A rock solid commitment to using low maximum amounts of irrigation water "no matter what" as part of limited irrigation sorghum production WILL limit your economic return.

"Your potential yield response using limited, but timely irrigation will generally be higher than in full irrigation," Trostle concluded. "You can bank on that. You certainly are not afraid of overwatering."

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