



## Last Recommended Planting Date Guidelines for Sunflower in the Texas High Plains

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How late can sunflowers be planted in the Texas South Plains and the Texas Panhandle with minimal risk for maturing a good yielding, high quality crop? This depends on fall cooling temperatures, actual frost and light freeze, and hybrid maturity.

Maturation of Texas High Plains sunflower in the fall is a question for two key reasons:

- 1) Sunflower is a practical crop for replanting after failed cotton (hail damage, drought, no sufficient rainfall in dryland until mid-summer);
- 2) Sunflower can tolerate temperatures as low as 28° F if the exposure is a few hours or less, yet continue near normal growth and development (albeit slowed).

Kansas State University suggests that sunflower best matures in the frost-free growing period (KSU, 2009). Significant acres of sunflower in West Texas do experience frost and even face potential freeze conditions but still produce modest results. This confounds setting planting date targets for sunflower. North Dakota State University calculates heat unit accumulation (growing degree-days) for sunflower with a base temperature of 44° F, but Colorado State University uses a more conservative 50° F.

In contrast, grain sorghum, the most common crop of choice for late planting after summer crop storm damage or lack of planting moisture in the Texas High Plains is much more subject to limitations that result in lower yield and test weight. Grain sorghum will shut down for good at about 5-8° F higher temperature than sunflower, and relative development is much slower than sunflower even in the 40s° F.

Planting sunflower into early and mid-July means a grower risks not fully maturing a crop. Also, particularly with oilseed sunflowers, oil content is the last process that occurs in maturing the sunflower seed. Though respectable yield may still be achieved with later plantings, significant cold weather can curtail oil accumulation thus a farmer may incur a penalty for oil contents below 40% (sunflower pays a premium for oil content > 40%; discounts if less < 40%). Likewise, sunflower planted past early July will be beyond partial crop insurance coverage. However, later plantings can be effective under normal summer conditions if they become necessary in your operation as long as hybrid maturity is shortened.

Trials in eastern Colorado indicated that medium maturity hybrids planted the first week of July adequately matured in a normal season; however, later planted sunflowers yielded less than earlier plantings. Also, late maturing sunflowers take much more time to dry down (even if a desiccant is used) hence producers with substantial stalk boring insect infestations (stem weevil; soybean stem borer in sunflower, e.g. *Dectes texanus*) may risk increased lodging.

Using thirty-year climate data, county elevation, hybrid maturity, on-farm observations, and previous recommendations, here are some practical suggestions for the last recommended sunflower planting date in West Texas. The objective for growers is a relatively “safe” or low-risk recommended last planting date with a high expectation of successful production with little if

any limitation. In general sunflower yield potential and oil content are expected to decline somewhat from April to May to June then mid-July plantings.

## Two-Tiered Guidelines for West Texas Counties

- Tier 1—Last recommended planting date for satisfactory late-season sunflower production where we are confident that sunflower is largely free of major late-season crop limiting weather conditions
- Tier 2—Recommended cut-off date for all plantings where modest risk is assumed.

July 1/July 7—Dallam, Hartley.

July 5/July 12—Sherman, Hansford, Ochiltree, Moore, Hutchinson, Roberts, Oldham, Potter, Carson, Deaf Smith, Randall, Parmer, Castro, Bailey, Cochran.

July 10/July 17—Lipscomb, Hemphill, Gray, Wheeler, Armstrong, Donley, Swisher, Briscoe, Lamb, Hale, Floyd, Hockley, Lubbock, Crosby, Yoakum, Terry.

July 15/July 22—Collingsworth, Hall, Childress, Motley, Dickens, Lynn, Garza, Gaines, Dawson, Borden, Scurry, Fisher, Andrews, Martin, Howard, Mitchell, Nolan.

**Are there exceptions?** Individual farmers have sometimes achieved satisfactory results in the Panhandle and northwest South Plains with even later planting dates. But understand the risk has increased significantly for individual years that may result in poor production with little economic benefit, or even a loss.

A late planting date is not the way to manage risk! Don't plant a sunflower crop July 15 when you could have planted 10 days or even 3 days earlier if planting conditions were favorable. Just five days of additional heat unit accumulation due to planting five days sooner in July would require at least twelve days in early to mid-October to equal the same heat unit accumulation. Also later plantings are subject to more humidity and cool temperatures thus increased potential late-season disease development, particularly fungal rust, which prefers cooler, moist conditions for growth.

Consult your contractor: Contractors understand the risks you face and the quality of sunflower, whether for oil content or confectionary size, they are willing to receive.

These suggestions should encourage the farmer to not plant so late to lose significant yield potential and economic value, but to also reduce risk of late-season crop injury to a minimal level. As our experience increases with west Texas sunflower these dates will be re-evaluated.

Reference—KSU. 2009. High Plains Sunflower Production Handbook, MF-2384. R.F. Meyer (ed.), Kansas State Univ., Manhattan, KS (<http://www.ksre.ksu.edu/library/crpsl2/MF2384.pdf>)

For additional sunflower information, view these online resources:

- Texas A&M AgriLife Research & Extension Center, Lubbock, <http://lubbock.tamu.edu/sunflower>
- Texas A&M AgriLife Research Crop Testing Program, <http://varietytesting.tamu.edu/sunflower>
- National Sunflower Association, <http://www.sunflowernsa.com>

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