

Appendix 1 - Planting rates for seeding and sprigging in Texas, Zone 4

Name	Variety / Cultivar	Seeding rates are pounds pure live seed (PLS) per acre 3/, 5/, 6/	Southern Counties ONLY	Northern Counties ONLY	Entire Zone 4	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Land Resource Areas						Seeding Guidance	Soil 9/				Comments 10/
								86A	87A	87B	133B	150A	152B		Seeding Dates 7/, 8/	Coarse	Moderately Coarse	Medium	
PERENNIAL GRASSES 1/, 4/ Bahagrass	Pensacola, Tifton 9	12.0 - 15.0			X	I	W	X	X	X	X	X	X	10/1 - 6/1	X	X	X	X	Best adapted to the high rainfall areas of East Texas and the Coast Prairie. Adapted to a wide variety of soils with pH of 5.5 - 7.0; not recommended on soils with pH > 7.0, or soils with > 40" of sand at the surface unless in areas of >55" annual rainfall. It performs better than coastal bermudagrass on wet soils, but is not as drought tolerant as coastal.
Bahagrass	Argentine	12.0 - 15.0	X			I	W	X	X	X	X	X	X	9/1 - 6/1					Same as above; however, Argentine is more susceptible to ergot.
Seeded Bermudagrass	common; hulled	2.3 - 6.0				X	I	W	X	X	X	X	X	2/15 - 6/1 3/1 - 6/1 8/15 - 9/30	X	X	X	X	Best adapted to well and moderately well drained soils, optimum pH 5.5 - 8.0. Not recommended on deep or very deep sands, or areas flooded for long duration. Less drought tolerant than hybrid bermudagrass.
Seeded Bermudagrass	common; unhulled	3.0 - 8.0				X	I	W	X	X	X	X	X	2/15 - 6/1 3/1 - 6/1 8/15 - 9/30	X	X	X	X	Same as above
Seeded Bermudagrass	Cheyenne	3.0 - 8.0	X						X	X	X	X	X	2/15 - 6/1 8/15 - 9/30	X	X	X	X	Released in 1989 for turf and reclamation, adapted to moderate to well drained soils in the SE and Gulf Coast. Has produced lower yields than other seeded varieties in variety trials at Overton, TX.
Seeded Bermudagrass	Giant	3.0 - 8.0				X	I	W	X	X	X	X	X	2/15 - 6/1 3/1 - 6/1 8/15 - 9/30	X	X	X	X	Adaptation similar to common, wider leaves, slightly higher productivity than common. Stands have tended to thin out over time.
Seeded Bermudagrass	Guyman	3.0 - 8.0			X	I	W	X	X	X	X	X	X	3/1 - 6/1					Soil adaptation similar to common. Cold tolerance similar to Tifton 44.
Seeded Bermudagrass	Ranchero Frio	3.0 - 8.0	X			I	W	X	X	X	X	X	X	2/15 - 6/1 8/15 - 9/30					Mixture of Cheyenne and giant. Adaptation same as common. Produced less than Texas Tough and Tierra Verde in variety trials at Overton, TX.
Seeded Bermudagrass	Texas Tough	3.0 - 8.0				X	I	W	X	X	X	X	X	2/15 - 6/1 3/1 - 6/1 8/15 - 9/30	X	X	X	X	Mixture of common hulled, common unhulled, and giant bermudagrass. Adaptation same as common. Most productive seeded variety in 3 year trial at Overton, TX.
Seeded Bermudagrass	Tierra Verde	3.0 - 8.0				X	I	W	X	X	X	X	X	2/15 - 6/1 3/1 - 6/1 8/15 - 9/30	X	X	X	X	Similar mixture to Texas Tough. Adaptation same as common. Production slightly less than Texas Tough in Overton variety trials.
Hybrid Bermudagrass 2/	Alicia	w/ sprigging machine 12 - 20 Bu/ac 15 - 25 cu.ft. broadcast 24 - 40 Bu/ac 30 - 50 cu.ft.				X	I	W	X	X	X	X	X	1/15 - 6/1 8/15 - 9/30	X	X	X	X	Adaptation similar to coastal, but less winter hardy and recovers slower than coastal after severe winter. Yield is usually less than coastal. Good for erosion control, provides quicker cover than coastal, but forage is usually lower in quality than coastal. Somewhat susceptible to rust
PERENNIAL GRASSES 1/, 4/ Hybrid Bermudagrass 2/	Brazos	w/ sprigging machine 12 - 20 Bu/ac 15 - 25 cu.ft. broadcast 24 - 40 Bu/ac				X	I	W	X	X	X	X	X	1/15 - 6/1 8/15 - 9/30	X	X	X	X	Production is similar to higher than coastal on adapted soils. Cold tolerance similar to coastal. Usually higher digestibility than coastal
Hybrid Bermudagrass 2/	Coastal	w/ sprigging machine 12 - 20 Bu/ac 15 - 25 cu.ft. broadcast 24 - 40 Bu/ac 30 - 50 cu.ft.				X	I	W	X	X	X	X	X	1/15 - 6/1 8/15 - 9/30	X	X	X	X	Best adapted to moderately to well drained sandy to loamy soils, but will persist on clayey soils. Moderate cold tolerance
Hybrid Bermudagrass 2/	Coastcross -1 and Tifton 68	w/ sprigging machine 12 - 20 Bu/ac (15 - 25 cu.ft.) broadcast 24 - 40 Bu/ac (30 - 50 cu.ft.)	X			I	W	X	X	X	X	X	X	1/15 - 6/1 8/15 - 9/30	X	X	X	X	Soil adaptation same as coastal, but both lack cold tolerance, which limits their use to coastal areas of Texas. Both have good disease resistance and produce higher quality forage than coastal. Coastcross primarily spreads by above ground stolons, only occasionally produces rhizomes. Tifton 68 only produces stolons

Dallisgrass		15.0				X	I	W	X	X	X	X	X	X	X	2/15 - 4/15 3/1 - 4/15			X	X	X	Best adapted to moist fertile loamy to clayey soils, primarily bottomlands in east Texas and Gulf Coast. Ergot can be a problem
Dropseed: sand	Borden County Germplasm	1.0				X	N	W	X							2/15 - 5/1 3/1 - 5/15			X	X	X	Plant no deeper than 1/8 " deep on fixe texture soil, no deeper than 1/2" deep on course textured soil
Eastern gamagrass	Jackson	10.0				X	N	W	X	X	X	X	X	X	X	Not Stratified 2/15 - 5/15			X	X	X	inches of rainfall. Not recommended on deep or very deep sandy soils. May be used for Pollinator Habitat plantings.
PERENNIAL GRASSES 1/, 4/																1/15 - 1/15						Adapted to moist well to moderately well drained loamy to clayey sites throughout Texas except for the South Texas Plains. May be used for Pollinator Habitat plantings.
Eastern gamagrass	Local harvest	20.0				X	N	W	X	X	X	X	X	X	X	2/15 - 5/15			X	X	X	
False Rhodesgrass	Kinney Germplasm	1.0	X				N	W							X	2/1 - 5/1; 9/1 - 11/0			X	X	X	Plant 1/8 to 1/4 inch deep, planting too shallow is better than too deep
Florida paspalum	Harrison Germplasm	8.0				X	N	W	X	X	X	X	X	X	X	12/1 - 6/1			X	X	X	Quail, dove and turkey eat Florida paspalum seed. May be used for Pollinator Habitat plantings. Plant no deeper than 1/2 inch
Gramma: Hairy	Chaparral Germplasm	2.0	X				N	W							X	2/1 - 5/1; 9/1 - 11/1			X	X	X	Plant no deeper than 1/4 inch
Gramma: Slender	Dilley Germplasm	8.0	X				N	W							X	2/1 - 5/1; 9/1 - 11/2			X	X	X	Plant no deeper than 1/4 inch
Gramma: Texas	Atascosa Germplasm	10.0	X				N	W							X	2/1 - 5/1; 9/1 - 11/3			X	X	X	Plant no deeper than 1/4 inch
Indiangrass, yellow	Lometa	4.5				X	N	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	Adapted to soils from sands to clays in areas of Texas that receive at least 22 inches of annual precipitation. Best adapted to loamy soils. May be used for Pollinator Habitat plantings.
Johnsongrass		10.0				X	I	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	Adapted to most soils. Best adapted to clay soils.
Kleingrass	Selection-75	1.5 - 2.0				X	I	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	Adapted to all areas of Texas, receiving at least 20 inches of rainfall annually. May winter kill in the northern and northwestern counties of the state. Best adapted to loamy to clayey soils in central, eastern
Kleingrass	Verde	1.7 - 2.0				X	I	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	Same as above, but larger seeded
Lovegrass, weeping	common, Ermelo, Renner	1.5				X	I	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X		Best adapted to sandy soils in areas of Texas receiving 16 inches or more annual rainfall. Moderate cold tolerance
Lovegrass, Wilman	common, Palar	1.5				X	I	W	X	X	X	X	X	X	X	3/1 - 5/1 3/1 - 5/15			X	X	X	Soil adaptation similar to weeping lovegrass. Wilman is less cold tolerant, but more palatable than other lovegrass. Only plant south of Lamar County.
Pappusgrass: Pink	Maverick Germplasm	3.0	X				N	W							X	8/15-10/15			X	X	X	Plant 1/8 to 1/4 inch deep
Pappusgrass: Whiplast	Webb Germplasm	3.0	X				N	W							X	8/15-10/16			X	X	X	Plant 1/8 to 1/4 inch deep
Purpletop Tridens, <i>Tridens flavus</i>	Common	2 - 6				X	N	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	May be used for Pollinator Habitat plantings.
Switchgrass	Alamo	2.0				X	N	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	Adapted to most soils in areas of Texas receiving at least 25 inches of precipitation annually. Tolerates poor drainage.
Switchgrass	Local harvest	3.5				X	N	W	X	X	X	X	X	X	X	2/15 - 5/1 3/1 - 5/15			X	X	X	Same as above
Velvet rosettegrass	Pilgrim Germplasm	3.0				X	N	W							X	12/1 - 6/1			X	X	X	Plant no deeper than 1/2 inch
Wildrye: Canada, <i>Elymus canadensis</i>	Lavaca Select Germplasm, Common, Local Ecotype	12				X	N	C	X	X	X	X	X	X	X	9/1 - 10/15			X	X	X	Best suited to uplands. Should be planted 1/4 to 1/2 inches. Suitable to be included in pollinator habitat .
Wildrye: Virginia, <i>Elymus virginicus</i>	Omaha, Kinchaffonee Germplasm, Common, Local Ecotype	12				X	N	C	X	X	X	X	X	X	X	9/1 - 10/15			X	X	X	Best suited to bottomlands. Should be planted 1/4 to 1/2 inches. Suitable to be included in pollinator habitat
Windmillgrass: shortspike	Welder Germplasm	0.5	X				N	W							X	2/1 - 5/1; 9/1 - 11/1			X	X	X	Plant 1/8 to 1/4 inch deep, planting too shallow is better than too deep

County Climate Data

County	Last Spring Freeze Date	First Fall Freeze Date	Northern County	Southern County
Delta	2/28	12/2	X	
Lamar	2/28	12/2	X	
Red River	2/28	12/2	X	
Hopkins	3/1	11/27	X	
Rains	3/1	11/27	X	
Wood	3/1	11/27	X	
Bowie	3/3	11/24	X	
Cass	3/3	11/24	X	
Marion	3/3	11/24	X	
Camp	3/8	11/24	X	
Franklin	3/8	11/24	X	
Gregg	3/8	11/24	X	
Morris	3/8	11/24	X	
Titus	3/8	11/24	X	
Upshur	3/8	11/24	X	
Henderson	2/28	11/30	X	
Van Zandt	2/28	11/30	X	
Harrison	2/27	11/30	X	
Panola	2/27	11/30	X	
Anderson	2/26	12/6	X	
Freestone	2/26	12/6	X	
Cherokee	2/23	12/2	X	
Smith	2/23	12/2	X	
Rusk	2/23	12/2	X	
Nacogdoches	2/27	11/27	X	
Sabine	2/27	11/27	X	
San Augustine	2/27	11/27	X	
Shelby	2/27	11/27	X	
Angelina	2/25	12/3	X	
Houston	2/25	12/3	X	
Polk	2/25	12/3	X	
San Jacinto	2/25	12/3	X	
Trinity	2/25	12/3	X	
Jasper	3/4	11/22	X	
Newton	3/4	11/22	X	
Tyler	3/4	11/22	X	
Brazos	2/11	12/18		X
Grimes	2/11	12/18		X
Robertson	2/11	12/18		X
Waller	2/11	12/18		X
Galveston	2/12	12/16		X
Harris	2/12	12/16		X
Montgomery	2/12	12/16		X
Hardin	2/13	12/10		X
Liberty	2/13	12/10		X
Chambers	1/31	12/28		X
Jefferson	1/31	12/28		X
Orange	1/31	12/28		X
Leon	2/16	12/10		X
Madison	2/16	12/10		X
Walker	2/16	12/10		X

Spring last freeze dates, most restrictive date within the team for 70% occurrence of 28 degrees F.
Based on NRCS county weather data

Fall first freeze dates, most restrictive date within the team for 70% occurrence of 28 degrees F.
Based on NRCS county weather data