Seeding Dates: 7/, 8/

3	ATASCOSA, BROOKS, DUVAL, NORTHERN PART OF HIDALGO, JIM WELLS, KENEDY, LIVE OAK, McMULLEN	=	1/15-5/1	9/1-9/30	*9/1-11/1
**	Planting dates for Bermuda Tops are as follows: Zones 1, 2, 3, 4, 5, 7	=	5/15-7/1	9/1-9/30	
**	Planting dates for Bermuda Tops are as follows: Zones 6, 8, 9	=	5/15-7/1	9/1-9/15	
	Planting dates for Woodies - ALL ZONES	=	11/15 - 3/1		

					Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				
PERENNIAL GRASSES 1/, 4/	**Variety**	**Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)**	Native (N) or Introduced (I)	Season of growth	1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	**Comments 10/**
Bahiagrass:	Pensacola, Tifton 9, Argentine	15.0	I	W						X	X	X			X	X	X	X					Best adapted to loamy soils in the high rainfall areas of East Texas and the Coast Prairie. Adapted to a variety of soils with pH of 5.5 - 7.0; not recommended on soils with pH > 7.0, clays, 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. Argentine is susceptible to ergot.
Seeded Bermudagrass:	common; hulled common: unhulled	2.3	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	Best adapted to well and moderately well drained soils, optimum pH 5.5 - 8.0. Not recommended on areas flooded for long duration. Less drought tolerant than hybrid bermudagrass.
	Cheyenne	3.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Released in 1989 for turf and reclamation, adapted to moderate to well drained soils in the SE and Gulf Coast.
	Giant, NK37	3.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	Adaptation similar to common, wider leaves, slightly higher productivity than common. Stands have tended to thin out over time.
	Texas Tough	3.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	Mixture of common hulled, common unhulled, and giant bermudagrass. Adaptation same as common.
	Ranchero Frio	3.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Mixture of Cheyenne and giant. Adaptation same as common.
	Tierra Verde	3.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	Similar mixture to Texas Tough. Adaptation same as common.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

PERENNIAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Hybrid Bermudagrass: 2/	Alicia	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Adaptation and yield potential similar to coastal, but less winter hardy. Good for erosion control, provides quicker cover than coastal, but forage is usually lower in quality than coastal. Somewhat susceptible to rust.
	Callie	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Adapted to medium to heavy textured soils, production is similar to higher than coastal on adapted soils. Cold tolerance similar to coastal. Usually high digestibility than coastal.
	Coastal	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Best adapted to moderately to well drained sandy to loamy soils, but will persist on clayey soils. Moderate cold tolerance.
	Coastcross -1 and Tifton 68	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	Soil adaptation same as coastal, but both lack cold tolerance, which limits their use to coastal areas and South 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.
	Common	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	Best adapted to well and moderately well drained soils, optimum pH 5.5 - 8.0. Not recommended on areas flooded for long duration. Less drought tolerant than hybrid bermudagrass.
	Grazer	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Adaptation and yield potential similar to coastal, but less winter hardy. Short growth habit results in lower total production than coastal, but quality is better than coastal. Best used as pasture not hay.
	Jiggs	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Adapted to a wide range of soils, faster establishment and higher production potential than coastal on most soils, especially clayey soils. Forage quality similar to coastal. Cold tolerance may be less than coastal. Jiggs is susceptible to rust.
	Tifton 44	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil adaptation is similar to coastal, but cold tolerance is better.
	Tifton 78	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil adaptation and cold tolerance similar to coastal, but establishes and spreads faster than coastal. Spring growth starts earlier than coastal. Immune to rust.
	Tifton 85	w/ sprigging machine - 12 Bu/ac 15 cu.ft. Broadcast - 24 Bu/ac 32 cu.ft.	I	W				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Soil adaptation similar to coastal, but less cold tolerant. Faster establishment, higher production potential, and better forage quality than coastal. Performs better than coastal on sandy soils.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

PERENNIAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Bermudagrass Propagated by tops	Alicia, Jiggs, Tifton 85	5 -7 bales	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Mature tops are not usually available until the end of May. They must be planted into moist soils and packed immediately after planting. Tifton tops do not do well in wet areas.
Bermudagrass	Sod Mulch	260 cubic yd/ac	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Bermudagrass sprigs and stolons scraped up with topsoil and spread and packed to a thickness of 2 inches. Usually used on disturbed sites that would be hard to get seed or sprigs established.
Bluestem: big	Earl, Kaw, local harvest	6.0	N	W	X		X	X	X	X	X	X	X	X	X	X	X	X	X			X	Best adapted to deep fertile upland sites with > 25" rainfall annually.
Bluestem: little	Aldous, Cimarron, Native mix	3.4	N	W			X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	Aldous and Cimerron are best adapted to all upland soils in the Claypan and Southern Blackland areas of Texas.
Bluestem: native	Cane	1.2	N	W									X			X	X	X					Best adapted to loamy soils. No known commercial seed source.
	Pinhole, Silver	1.8	N	W									X			X	X	X					Best adapted to loamy soils. No known commercial seed source.
	Sand	6.0	N	W	X		X	X	X	X	X	X	X	X	X	X	X	X	X				Prefers deep sands. No known commercial seed source.
	Seacoast	3.4	N	W	X		X	X	X	X	X	X		X	X	X			X				Best adapted to sandy sites. No known commercial seed source.
Bluestem, yellow:	Angleton	1.0	I	W	X					X	X	X				X	X	X			X	X	Best adapted to moderately well to well drained loamy and clayey soils of the Gulf Coast that receive 30 inches or more annual precipitation. Very tolerant of alkaline soil conditions.
	Caucasian	1.2	I	W	X	X	X	X	X	X	X	X	X			X	X	X					Good forage production and easily established.
	Gordo	1.2	I	W	X		X	X	X	X	X	X				X	X	X		X			Best adapted moderately to well drained clay soils that receive 25 inches or more annual precipitation.
	Ironmaster	1.8	I	W									X			X	X	X					Use on soils that are iron-deficient.
	Kleberg, KR	1.2	I	W	X	X	X	X	X	X	X	X	X			X	X	X				X	Best adapted to moderately to well drained sites with medium to heavy textured soils that receive at least 20 inches of rainfall.
	Medio	1.0	I	W	X			X	X	X	X	X	X			X	X	X			X		Same as K.R. Not recommended in shallow conditions but will tolerate some wetness.
	Old World T587	1.2	I	W	X	X	X	X	X	X	X	X	X			X	X	X					Same as K.R. except not recommended in shallow conditions.
	Pastura	3.4	I	W			X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	May not be commericially available.
	Plains	1.8	I	W									X			X	X	X					Best adapted to loamy soils. Optimum pH is 5.5 to 7.5.
	Pretoria 90	1.2	I	W	X	X	X	X	X							X	X	X		X			Will tolerate some salinity
	WWB. Dahl	1.2	I	W	X	X	X	X	X	X	X	X	X		X	X	X	X				X	Best adapted to moderately well drained sandy loam or clay loams.
	WW Spar	1.8	I	W	X	X	X	X	X	X	X	X	X			X	X	X				X	Best adapted to loamy soils. Optimum pH is 5.5 to 7.5.
					Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

PERENNIAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)	Native (N) or Introduced (I)	Season of growth	1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	Comments 10/
Bristlegrass:	Plains	3.0	N	W	X	X	X	X	X	X	X	X	X			X	X	X		X		X	Found on sandy to medium textured soils. Palatable, short lived bunch grass.
	Kika 648 Germplasm	2.0	N	W	X	X	X	X	X		X		X	X	X	X	X	X					Planted only in a mix with streambed bristlegrass, mix is available commercially as Catrina Blend; Plant 1/8 to 1/4 inch deep
Bristlegrass: Streambed	Kika 677 Germplasm , Kika 819 Germplasm, Kika 820 Germplasm	3.0	N	W	X	X	X	X	X		X		X	X	X	X	X	X					Planted only in a mix with plains bristlegrass, mix is available commercially as Catrina Blend; Plant 1/8 to 1/4 inch deep
Buffalo grass:	Burs (treated)	8.0	N	W	X	X	X	X	X	X	X	X	X			X	X	X					Vigorous grower.
Buffel grass:	Burs	2.0	I	W	X	X	X							X	X	X	X	X				X	Very aggressive with competition
	Grain	1.0	I	W	X	X	X							X	X	X	X	X				X	Very aggressive with competition
Chloris:	2 & 4-Flower Trichloris	1.2	N	W	X	X	X	X	X							X	X	X		X			Also called "False Rhodesgrass"
	Kenny Germplasm	1.0	N	W	X	X	X	X	X		X				X	X	X	X					Plant 1/8 to 1/4 inch deep, planting too shallow is better than too deep
Cottontop: Arizona		1.2	N	W	X	X	X	X	X	X	X	X	X		X	X	X					X	Plant no deeper than 1/4 inch
	La Salle Germplasm	2.0	N	W	X	X	X	X	X		X				X	X	X					X	Plant no deeper than 1/4 inch
Dallisgrass		3.5	I	W						X	X	X				X	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	1.0	N	W	X	X	X	X	X	X			X	X	X	X	X			X		X	Palatability is low, but provides good early grazing under good moisture conditions. Prolific seed producer.
Eastern gamagrass:	Jackson, San Marcos germplasm, Texas Sue	10.0	N	W				X	X	X	X	X	X			X	X	X			X		Cover depth is 1/2 to 3/4 inches. Adapted to most soils in areas of Texas that receive more than 25 inches of rainfall. Easier to establish than Pete or Iuka.
	Iuka, Iuka4, Pete	10.0	N	W				X	X	X	X	X	X			X	X	X			X		Same as Jackson
	Local harvest	10.0	N	W				X	X	X	X	X	X			X	X	X			X		Adapted to moist well to moderately well drained loamy to clayey sites throughout Texas except for the South Texas Plains.
Fescue: Tall	Kentucky 31, other adapted endophyte infected varieties	10.0	I	C						X	X	X				X	X	X			X	X	Best adapted to bottomland soils and marginally adapted clay, clay loam and loamy upland sites in areas of East Texas that receive at least 40 inches of rainfall annually. It should be allowed to reseed every year to help insure persistence. Tolerates low pH, poorly drained and shallow soils.
	AU Triumph, Jesup, and other adapted endophyte free varieies	25.0	I	C						X	X	X				X	X	X			X	X	Same as above. Jesup can tolerate summer heat better than other endophyte free varieties.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

PERENNIAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Grama: Hairy	Chaparral Germplasm	2.0	N	W	X	X	X	X	X		X			X	X	X	X	X					Plant no deeper thatn 1/4 inch
Grama: Sideoats	El Reno	4.5	N	W		X	X	X	X	X	X	X	X	X	X	X	X	X				X	Is adapted to a wide variety of soil and climatic conditions, but prefers a medium or coarse soil. May become dominant species on shallow calcareous sites.
	Haskell	4.5	N	W		X	X		X				X	X	X	X	X	X				X	Is adapted to a wide variety of soil and climatic conditions, but prefers a medium or coarse soil. May become dominant species on shallow calcareous sites.
	Uvalde	4.5	N	W		X	X		X				X	X	X	X	X	X				X	Is adapted to a wide variety of soil and climatic conditions, but prefers a medium or coarse soil. May become dominant species on shallow calcareous sites.
Grama: Slender	Dilley Germplasm	8.0	N	W	X	X	X	X	X		X			X	X	X	X	X					Plant no deeper thatn 1/4 inch
Grama: Texas	Atascosa Germplasm	10.0	N	W	X	X	X	X	X		X			X	X	X	X	X					Plant no deeper thatn 1/4 inch
Guineagrass		2.0	I	W	X	X	X							X	X	X	X	X	X	X		X	Aggressive. Shade tolerant.
Indiangrass: yellow	Lometa	4.5	N	W	X		X	X	X	X	X	X	X	X	X	X	X		X			X	Adapted to soils from sands to clay loams in areas of Texas that receive at least 22 inches of annual precipitation. Best adapted to loamy soils.
Johnsongrass		10.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	Adapted to most soils. Best adapted to clay soils.
Kleingrass	Selection 75	1.5	I	W	X	X	X	X	X	X	X	X	X			X	X	X		X		X	Adapted to all areas of Texas, receiving at least 20 inches of rainfall annually. Best adapted to loamy to clayey soils in central, eastern, and southeastern Texas.
	Verde	1.7	I	W	X	X	X	X	X	X	X	X	X			X	X	X		X		X	Same as above.
Lovegrass	Mason sandhill	1.5	I	W	X		X						X	X	X	X	X		X				Occurs on sandy soils. Has good drought resistance, but lacks persistence under heavy grazing
	Sand	0.5	I	W									X	X	X	X			X				Same as above.
Lovegrass: weeping	common, Ermelo, Renner	1.5	I	W	X	X	X						X	X	X	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	I	W	X	X	X	X	X	X			X	X	X	X			X				Soil adaptation similar to weeping lovegrass. Wilman is less cold tolerant, but more palatable than other lovegrass.
Panicum:	blue	2.0	I	W	X		X	X	X	X	X	X	X			X	X	X				X	High forage and seed yields. Grows best on well drained soils. Lacks winter hardiness.
Pappasgrass	Pink, Whiplash	2.5	N	W	X	X	X									X	X	X		X		X	Seed may not be commercially available.
Rhodesgrass:	Bell	1.0	I	W	X	X	X	X	X							X	X	X		X		X	Grows fairly well in salline conditions.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

PERENNIAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Ryegrass: perennial		4.0	I	C	X			X	X	X	X	X	X	X	X	X	X	X					Widely used in mixtures for pasture and hay in eastern Texas. Grows well on heavy soils and tolerates heavy grazing.
Sacaton	Alkali, Big	1.0	N	W	X	X	X	X	X							X	X	X		X			Grows well on sites with salt, alkali, and droughty conditions. Eaten by livestock when green, but does not cure as a palatable winter feed.
	Falfurrias Germplasm	1.0	N	W	X	X	X	X	X							X	X	X		X			Grows well on sites with salt, alkali, and droughty conditions. Eaten by livestock when green, but does not cure as a palatable winter feed.
Sprangletop	green	1.7	N	W	X	X	X	X	X	X	X	X	X			X	X					X	Highly palatable. Establishes quickly.
Switchgrass:	Alamo	2.0	N	W	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		Adapted to most soils in areas of Texas receiving at least 25 inches of precipitation annually. Tolerates poor drainage.
	native, local harvest	3.5	N	W	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		Same as above
Wildrye:	Canada	3.0	N	C						X	X	X	X			X							Cover depth is 1/4 to 1/2 inch.
	Canada: Lavaca Germplasm	10.0	N	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Plant 1/4 to 1/2 inch deep
	Virginia	3.0	N	C	X	X	X	X	X	X	X	X	X			X							Cover depth is 1/4 to 1/2 inch.
Windmillgrass: shortspike	Welder Germplasm	0.5	N	W	X	X	X	X	X		X		X	X	X	X	X	X					Plant 1/8 to 1/4 inch deep, planting too shallow is better than too deep
Windmillgrass: Hooded	Mariah Germplasm	0.7	N	W	X	X	X	X	X		X		X	X	X	X	X	X					Plant 1/8 to 1/4 inch deep, planting too shallow is better than too deep

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

PERENNIAL LEGUMES AND FORBS 1/, 4/	Variety	Seeding rate 3/, 6/ (PLS per acre unless noted as Com.)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Acacia, Prairie	Plains Germplasm	5.0	N	W				X	X	X	X	X	X	X	X	X	X	X	X					Tough subshrub. Plant 1/2 to 3/4 inch deep with proper innoculant
Alfalfa		20 Com	I	C						X	X	X	X		X	X	X	X						Moderately deep to deep, loamy, well drained soils pH 6.5 or greater with good infiltration and water holding capacity.
Bushsunflower: awnless	Plateau	2.6	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	Excellent deer plant.
Engelmanndaisy	Eldorado	15.0	N	C	X	X	X	X	X	X	X	X	X		X	X	X	X				X	Adapted to loamy to clayey upland soils throughout Texas, except extreme eastern TX.
Illinois bundleflower	Sabine	13.6	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Adapted to most upland and bottomland soils in areas receiving at least 15 inches of rainfall annually.
Lespedeza	Kobe	25 Com.	I	W						X	X	X		X	X	X	X	X					Adapted to well darined soils in Southeast Texas.
	Serecia	2.3	I	W						x	x	x				X	X	X					Adapted to clay or loam soils. Will grow at pH < 5.0 and where aluminum toxicity is a problem for other plants, but the optimum pH is 5.0 - 6.5.
Leucaena	Popinac	4.0	I	W	X	X	X							X	X	X	X	X					Excellent wildlife plant.
	Tepequaje	4.0	N	W	X	X	X							X	X	X	X	X					Excellent wildlife plant.
Maximilian sunflower	Aztec	3.0	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Adapted to a variety of soils, favors well drianed sunny sites receiving at least 18 inches of rainfall annually
	common	3.0	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Well adapted to variety of sites. Favors welll drained sunny sites.
Perennial peanut		40 bu sprigs	I	W				X	X	X	X	X	X	X	X	X	X		X				Best adapted to well drained sandy to loamy soils with pH between 5.0 and 7.5. Moderate cold tolerance.
Prairie clover: purple		3.0	N	W				X	X	X	X	X	X	X	X	X	X		X				Grows well on high pH Blackland soils. Can cause bloat.
Prairie clover: white		2.0	N	W				X		X	X	X		X	X	X	X	X					Grows well on high pH Blackland soils. Can cause bloat.
Western Ragweed		7.5	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X			Valuable food source for small game birds.
Zemenia: orange	Kingsville Germplasm	6.0	N	W	X	X	X		X				X	X	X	X	X	X	X			X	Use as part of a forb/legume mix
Zemenia: orange		3.4	N	W	X	X	X	X	X	X	X	X	X			X	X	X				X	Fair wildlife plant.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

ANNUAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (Commercial lbs. per acre unless noted)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Barley		72.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	Sensitive to poorly drained soils. Cover depth is 1/2 to 1 inch.
Corn		20.0	I	C	X		X	X	X	X	X	X	X			X	X	X					
Crabgrass		1.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Adapted to a wide variety of soils, most productive in areas of high summer rainfall. Forage quality is usually higer than most warm season perennial grasses. Reseeds well
Forage Sorghum: grass types		15.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	Adapted to a wide variety of soils, needs pH of 5.5 or greater. Highly productive and responsive to nitrogen. Nitrate or prussic acid poisoning can occur under some circumstances.
Forage Sorghum: others		20.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	Same as above
Grain Sorghum		20.0	I	W	X	X	X	X	X	X	X	X	X		X	X	X	X					Same as above
Hegari		30.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Same as above
Millet: browntop		20.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Adapted to a wide variety of soils, best on well drained loamy, does not do well on calcareous soils. Grows 0.6 - 1.2 meters tall. Acceptable forage for horses.
Millet: foxtail		20.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Adapted to a wide range of soils, best on well drained loamy. Not recommended for horses, can cause kidney and joint problems in horses. Grows 0.3 - 1.75 meters tall.
Millet: Japanese		20.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Used primarily for wildlife, adapted to wet soils.
Millet: pearl		20.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Good for hay or silage, not as drought tolerant as forage sorghum. Adapted to a wide variety of soils, best on well drained loamy, does not do well on calcareous soils. Grows 2.0 - 3.0 meters tall.
Millet: proso		15.0	I	W	X	X	X	X	X	X	X	X	X		X	X	X	X				X	Used primarily for wildlife food plots. Adapted to a wide range of soils, best on well drained loamy. Matures in about 60 days after emergence.
Oats		64.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	Early fall grazing, ability to germinate in low moisture. Least cold tolerant, limited winter forage, poor drought tolerance once established. Usually planted in mixture. Adapted to deep loam and sandy loams. Does not perform well in very wet or very dry seasons. Usually not planted in NE Texas due to lack of cold tolerance

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ANNUAL GRASSES 1/, 4/	Variety	Seeding rate 3/, 6/ (Commercial lbs. per acre unless noted)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Rye		56.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Most drought resistant and cold tolerant of the cool season annuals. Prefers well drained sandy to loamy soils. Early maturity produces the most winter forage.
Ryegrass: annual		12.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	Best adapted to areas of Texas that receive more than 25 inches of rainfall annually. It is adapted to a wide range of soils, and it is the only cool season annual grass that will tolerate poor drainage.
Sorghum alum		12.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	Excellent wildlife plant.
Speltz		40.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				Cover depth is 1/2 to 1 inch.
Texas Panicum		5.0	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	
Triticale		50.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				Cross between wheat and rye. Usually yields less than rye, oats, and ryegrass.
Wheat		60.0	I	C	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				Good cold and drought tolerance. Good fall and winter production. Least productive of the cool season forages. Adapted to a wide range of soils.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

ANNUAL LEGUMES 1/, 4/	Variety	Seeding rate 3/, 6/ (Commercial lbs. per acre unless noted)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Alyceclover		20.0	I	W						X	X	X		X	X	X	X	X					Best adapted to Gulf Coast and other areas of high summer rainfall. Well drained sandy soils. Tolerant of low pH. Not competitive with weeds at seedling stage.
Buckwheat		3.5	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Clammyweed, Rio Grande	Zapata Germplasm	8.0	N	W	X	X	X	X	X		X			X	X	X	X	X	X		X	X	
Clover: arrowleaf	Meechee, Yuchi, Amclo	10.0	I	C						X	X	X	X	X	X	X	X		X				Adapted to sandy to loamy soils with pH 5.5 - 7.0 and good drainage. Late maturity, low bloat potential, good cold tolerance.
Clover: ball		3 PLS	I	C						X	X	X			X	X	X	X			X		Adapted to loamy to clayey soils with pH 5.5 - 8.0 and fair drainage. Late maturity, low bloat potential, good cold tolerance.
Clover: burseem	Bigbee	14.0	I	C						X	X	X	X	X	X	X	X	X		X	X		Adapted to loamy to clayey soils with pH 6.5 - 8.0 and fair/poor drainage. Late maturity, low bloat potential, poor cold tolerance.
Clover: bur (grain)		10.0	I	C	X					X	X	X				X	X	X			X		Best adapted to well drained soils with pH 6.0 or higher. Cold tolerant south of I-20.
Clover: crimson		5.8	I	C						X	X	X	X	X	X	X	X	X					Adapted to most soils with pH 5.5 - 8.0 good drainage. Early maturity, medium bloat potential, good cold tolerance.
Clover: hop		3.0	I	C						X	X	X	X		X	X	X	X					Seed may not be commercially available.
Clover: persian, abon		5.0	I	C						X	X	X			X	X	X	X					Adapted to bottomland loamy to clayey soils with pH 6.5 - 8.0 and fair/poor drainage. Medium maturity, high bloat potential, fair cold tolerance.
Clover: red		15.0	I	C						X	X	X	X	X	X	X	X	X					Adapted to loamy to clayey soils with pH 6.5 - 8.0 and good drainage. Late maturity, low bloat potential, good cold tolerance. Biennial, usually acts as an annual in east TX.
Clover: rose	Overton R18	10.0	I	C						X	X	X			X	X	X	X					Adapted to most soils with pH 5.5 - 8.0 and good drainage. Medium maturity, low bloat potential, good cold tolerance.
Clover: subterranean	Karridale, Denmark	16.0	I	C						X	X	X	X			X	X	X					Adapted to loamy to clayey soils with pH 5.5 - 7.3 and fair drainage. Early to late maturity, medium bloat potential, fair cold tolerance.
Clover: subterranean	Clare, Nuba	16.0	I	C						X	X	X	X			X	X	X					Adapted to loamy to clayey soils with pH 6.0 - 8.0 and fair drainage. Medium maturity, medium bloat potential, poor cold tolerance.
Clover: white	Ladino, LA S-1, Regal, Osceola	5.0	I	C						X	X	X				X	X	X			X		Adapted to loamy to clayey soils (usually bottomlands) with pH 5.5 - 7.5 and fair/poor drainage. Late/perennial maturity, medium bloat potential, good cold tolerance.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

ANNUAL LEGUMES 1/, 4/	Variety	Seeding rate 3/, 6/ (Commercial lbs. per acre unless noted)	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Cowpea	Brabham, Chinese Red, Clay, Iron, New Era	40.0	I	W	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			Adapted to well drained soils pH range of 5.5 - 7.5. Drought tolerant.
	Whipporwill	50.0	I	W	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			Same as above.
Guar		12.0	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Lespedeza: common	Korean	25.0	I	W						X	X	X			X	X	X						Adapted to well drained soils throughout East and southeast Texas. Optimum pH range is 5.0 - 6.5. Tends to be squeezed out by vigorously growing warm season grasses in highly fertilized situations.
Medic: Black		10.0	I	C				X	X	X	X	X					X	X					Adapted to well drained soils with pH 6.0 or higher. Cold tolerant south of I-20.
Medic: Bur	Armadillo	10.0	I	C	X					X	X	X	X			X	X	X			X		Best adapted to well drained soils with pH 6.0 or higher. Cold tolerant south of I-20.
Medic:	Jemalong	10.0	I	C				X	X	X	X	X				X	X	X					
Partridge pea	Comanche	13.4 PLS	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			Adapted to sands and sandy loams receiving > 19 inches of annual rainfall. Good reseeeding annual.
Plantain, Hooker's	STN 561 Germplasm	10.0	N	C	X	X	X	X	X		X		X	X	X	X	X	X	X			X	Planted only in a mix with redseed plantain, mix is available commercially as Divot Tallow Weed Blend
Plantain, Redseed	STN 496 Germplasm	10.0	N	C	X	X	X	X	X		X		X	X	X	X	X	X	X			X	Planted only in a mix with Hooker's plantain, mix is available commercially as Divot Tallow Weed Blend
Sesame		5.0	I	W	X		X	X	X	X	X	X	X			X	X	X				X	
Soybean:		15.0	I	W	X					X	X	X			X	X	X	X				X	Adapted to well drained soils, pH range is 5.5 - 8.0. Drought tolerant when used for forage. Hay is difficult to cure, and if grazed no regrowth occurs. Best used for silage.
Spanish Peanuts		70.0	I	W						X	X	X		X	X	X			X	X			
Sunflower:native		5 PLS	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Sweetclover	Hubam, Madrid, Yellow Blossom	12.0	I	C	X		X	X	X	X	X	X	X	X	X	X	X	X					Adapted to well drained clay to clay loam, optimum pH range 6.5 - 7.5
Vetch: hairy		20.0	I	C	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			Adapted to most soils with pH 5.0 - 8.0 and good drainage. Late maturity, low bloat potential, good cold tolerance.
Winterpea	Austrian	35.0	I	C	X			X	X	X	X	X	X	X	X	X	X	X	X		X		Adapted to loam to sandy loam soils with pH 6.0 - 8.0 and good drainage. Medium maturity, fair/good cold tolerance. Best used w/small grain for silage, does not tolerate grazing very well.
	Singletary	35.0	I	C				X	X	X	X	X	X	X	X	X	X	X	X		X		Adapted to loamy to clayey soils with pH 5.5 - 8.0 and fair/poor drainage. Medium maturity, fair cold tolerance. Grazing should be discontinued in late spring to avoid seed toxicity and allow reseeding.

Appendix 1 - Plant Species, Rates, Dates and Adaptability in Texas, Zone 3

WOODIES	Plant Spacing (Feet) in Rows OR Broadcast Seeding Rate (PLS)	Plant Spacing (feet) between Motts	Native (N) or Introduced (I)	Season of growth	Adaptation by Major Geographic Areas									Adapted Plants by Soil Group 8/					Adaptation to Soil Limitations				Comments 10/
					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Anaqua	8 - 10	10 - 16	N	W	X	X	X	X	X	X	X	X				X	X						Excellent wildlife plant for browse, mast, and/or cover.
Bernardia	4 - 6	6 - 8	N	W		X	X	X	X							X						X	Excellent wildlife plant for browse, mast, and/or cover.
Brazil	4 - 6	6 - 8	N	W		X	X	X	X	X						X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Bumelia (Coma)	4 - 6	6 - 8	N	W	X	X	X	X	X	X	X	X	X			X	X	X				X	Excellent wildlife plant for browse, mast, and/or cover.
Desert Yaupon	4 - 6	6 - 8	N	W	X	X	X	X	X	X						X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Dewberrry	1 - 4	1 - 4	N	W				X	X	X	X	X	X	X	X	X			X				Excellent wildlife plant for browse, mast, and/or cover.
Eastern Persimmon	6 - 8	8 - 10	N	W				X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Elbowbush	4 - 6	6 - 8	N	W			X	X	X	X	X	X	X			X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Granjeno	4 - 6	6 - 8	N	W	X	X	X	X	X	X				X	X	X	X	X				X	Excellent wildlife plant for browse, mast, and/or cover.
Grape	8 - 10	1 - 4	N	W	X		X	X	X	X	X	X	X		X	X	X						Excellent wildlife plant for browse, mast, and/or cover.
Guajillo	4 - 6	6 - 8	N	W	X	X	X	X	X							X						X	Excellent wildlife plant for browse, mast, and/or cover.
Guayacan	4 - 6	6 - 8	N	W	X	X	X	X	X					X	X	X	X	X				X	Excellent wildlife plant for browse, mast, and/or cover.
Honeysuckle	1 - 4	8 - 10	N	W	X			X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Hackberry	8 - 10	10 - 16	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Huisache	4 - 6	6 - 8	N	C	X	X	X	X	X	X	X	X			X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Leucaena: Popinac	12.0 PLS	-	I	W	X	X	X							X	X	X	X	X					Excellent wildlife plant.
Leucaena: Tepequaje	12.0 PLS	-	N	W	X	X	X							X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Lime Prickllyash	4 - 6	6 - 8	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Lotebush	4 - 6	6 - 8	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Mulberry (Texas)	8 - 10	10 - 16	N	W			X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Oak: bur	8 - 10	10 - 16	N	W						X	X	X	X			X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Oak: Live	8 - 10	10 - 16	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				Excellent wildlife plant for browse, mast, and/or cover.
Oak: Post	8 - 10	10 - 16	N	W						X	X	X	X			X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Oak: Water	8 - 10	10 - 16	N	W						X	X	X				X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Pecan	8 - 10	10 - 16	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.

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					1 - Lower Rio Grande Valley	2 - West Rio Grande Plain	3 - Middle Rio Grande Plain	4 - Coastal Bend	5 - Eastern Rio Grande Plain	6 - Southwestern Claypan	7 - Middle Gulf Coast	8 - Middle Claypan	9 - Southern Edwards Plateau	Coarse	Moderately Coarse	Medium	Moderately Fine	Fine	Deep Sands	Saline Sites 11/	Wet Areas	Shallow Soils	
Pricklypear	1 - 2	6 - 8	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	Excellent wildlife plant for browse, mast, and/or cover.
Redbud	4 - 6	6 - 8	N	W			X	X	X	X	X	X		X	X	X	X						Excellent wildlife plant for browse, mast, and/or cover.
Russian Olive	4 - 6	6 - 8	I	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Saltbush: Armed	3.6 PLS	-	N	W	X	X	X									X	X			X			Excellent wildlife plant for browse, mast, and/or cover.
Saltbush: Australian	3.6 PLS	-	I	W	X	X	X									X	X			X			Excellent wildlife plant for browse, mast, and/or cover.
Saltbush: Four-Wing	15.4 PLS	-	N	W	X	X	X	X	X				X	X	X	X	X	X		X			Excellent wildlife plant for browse, mast, and/or cover.
Saltbush: Four-Wing	3 - 4	-	N	W	X	X	X	X	X				X	X	X	X	X	X		X			Excellent wildlife plant for browse, mast, and/or cover.
Skunkbush sumac	8 - 10	10 - 12	N	W	X	X	X	X	X	X			X	X	X	X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Texas Kidneywood	4 - 6	6 - 8	N	W	X	X	X	X	X							X	X					X	Excellent wildlife plant for browse, mast, and/or cover.
Texas persimmon	6 - 8	10 - 12	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Western Soapberry	8 - 10	10 - 12	N	W			X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Wild Plum - Rainbow	4 - 6	6 - 8	N	W	X	X	X	X	X	X	X	X	X	X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.
Yaupon	4 - 6	6 - 8	N	W				X	X	X	X	X		X	X	X	X	X					Excellent wildlife plant for browse, mast, and/or cover.

FOOTNOTES:

1/ Species are listed by common name and where applicable by released cultivar or variety. Planting rates are shown either as by PLS or commercial rates.

2/ Conversion factors: 3.5 bushels of tops = 1 bale; 7 bushels of sprigs = 1 bale; 1.25 cubic feet = 1 bushel; 15 pounds = 1 bushel.

3/ PLS = Pure Live Seed. Com = Commercial. To compute PLS from seed analysis information: Percent PLS = (% germination + % hard [dormant] seed) X % purity. Seeding rate in PLS pounds divided by % PLS will give you the bulk seeding rate needed to get the right amount of pure live seed.

4/ Local harvest may be used when seeding species of unknown or common variety, or natural stands. Local harvested seed should have its geographic origin within 200 miles north, 300 miles south, 100 miles east and 200 miles west of the site where it will be planted. It is also desirable that locally harvested seed be used on soils of the same texture as soils where seed was harvested.

5/ The TZ (tetrazolium salt) test can be used for the germination factor in figuring PLS if the dealer furnishes the seed tag or other proof the test was run by a reputable seed lab.

6/ Drill planting is defined as row spaced less than 20 inches apart. Row planting rates will be 1/3 of the drill rates.

7/ Field office personnel should use these dates as a guide, and not initiate planting of warm season species earlier than 2 weeks before the spring date. Seeding dates for warm season species will not be extended to less than 6 weeks before the fall date, unless noted in the Table. Local Field Office personnel may approve planting up to 2 weeks before or after the dates in the Table if local site conditions are suitable for planting, germination, and establishment of the selected species. Any further variance outside the dates in the Table must be approved in writing from the appropriate specialist.

8/ The optimum planting depth for sprigs & tops is 1.0 to 3.0 inches, small seeded (>35000 seed per pound) species is 1/8 to 1/4 inch, large seeded species 3/4 to 1.0 inches unless it is otherwise noted for the individual specie.

9/ Soil groups are based on the following textures: Coarse - Coarse sand, Sand, Fine sand, Very fine sand, Loamy coarse sand, Loamy sand, Loamy fine sand and Loamy very fine sand; Moderately Coarse - Sandy loam, Coarse sandy loam and fine sandy loam; Medium - Very fine sandy loam, Loam, Silt loam and silt; Moderately Fine - Clay loam, Sandy clay loam and Silty clay loam; Fine - Sandy clay, silty clay and clay.

10/ Additional information on adaptation is available in species specific NRCS Job Sheets, Texas Agricultural Extension Service publications, Texas Agricultural Experiment Station publications, and from the references listed below.

11/ For species best suited to these high saline and/or tidally influence areas see Texas Agronomy Technical Note TX-12.

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