

Utility Prairie - Seed Mix (Suitable for mesic to dry soils, statewide)

Guild	Scientific Name	Common Name	Rate: PLS lb/acre	Rate: Seeds/sqft	Height (in.)	Successional Stage	Hydro- logic Zone	Pollinator Value	Bloom Time (month)	Notes - Forage & Wildlife Value, Regional Suitability (E.S. = Ecological Section)	Forage Value and Plant Info Links	
G	<i>Andropogon gerardii</i>	big bluestem	3	11.00	36-96	L	M, MZ, D	Nests	8,9	High quality forage species	<a href="http://plants.usda.gov/plantguide/pdf/pg_ange.pdf">http://plants.usda.gov/plantguide/pdf/pg_ange.pdf</a> <a href="http://extension.missouri.edu/p/M181-15">http://extension.missouri.edu/p/M181-15</a>	
G	<i>Bouteloua curtipendula</i>	side-oats grama	0.5	1.1	12-36	M	MZ, D	Nests	7,8,9	High quality forage	<a href="http://plants.usda.gov/plantguide/pdf/pg_bocu.pdf">http://plants.usda.gov/plantguide/pdf/pg_bocu.pdf</a>	
G	<i>Bouteloua gracilis</i>	blue grama	0.1	1.5	6-20	L	D	Nests	7,8,9	Highly palatable to livestock (possibly low productivity)	<a href="http://plants.usda.gov/plantguide/pdf/pg_bogr2.pdf">http://plants.usda.gov/plantguide/pdf/pg_bogr2.pdf</a> <a href="http://animalrangeextension.montana.edu/articles/forage/species/grasses/Blue-grama.htm">http://animalrangeextension.montana.edu/articles/forage/species/grasses/Blue-grama.htm</a>	
G	<i>Elymus canadensis</i>	nodding/Canada wild rye	0.5	1	36-60	E	MZ, D	None	7,8	Good forage value early in season; less so after it matures	<a href="http://plants.usda.gov/factsheet/pdf/fs_ekc4.pdf">http://plants.usda.gov/factsheet/pdf/fs_ekc4.pdf</a> <a href="http://www.fs.fed.us/database/feis/plants/graminoid/elycan/all.html">http://www.fs.fed.us/database/feis/plants/graminoid/elycan/all.html</a>	
G	<i>Elymus trachycaulus</i>	slender wheatgrass	0.5	1.3	24	M	MZ, D	None	6,7	Palatable; grazed by wildlife & livestock	<a href="http://plants.usda.gov/plantguide/pdf/pg_etr7.pdf">http://plants.usda.gov/plantguide/pdf/pg_etr7.pdf</a> <a href="http://www.fs.fed.us/database/feis/plants/graminoid/elytra/all.html">http://www.fs.fed.us/database/feis/plants/graminoid/elytra/all.html</a>	
G	<i>Elymus virginicus</i>	Virginia wild rye	0.5	0.8	48	M	S-MZ	None	7,8	Appropriate for wet-mesic to mesic sites; if site is dry, substitute or remove, and increase percentages of other species Palatable, productive and nutritious forage for livestock and wildlife	<a href="http://plant-materials.nrcs.usda.gov/pubs/stpmc50758.pdf">http://plant-materials.nrcs.usda.gov/pubs/stpmc50758.pdf</a>	
G	<i>Panicum virgatum</i>	switchgrass	0.1	0.5	24-84	M	M, MZ	None	7,8,9	Productive, high quality hay; biofuels; value to wildlife as well	<a href="http://plants.usda.gov/factsheet/pdf/fs_pavi2.pdf">http://plants.usda.gov/factsheet/pdf/fs_pavi2.pdf</a> <a href="http://www.uwex.edu/ces/forage/pubs/switchgrass.pdf">http://www.uwex.edu/ces/forage/pubs/switchgrass.pdf</a> <a href="http://extension.missouri.edu/p/M181-23">http://extension.missouri.edu/p/M181-23</a>	
G	<i>Schizachyrium scoparium</i>	little bluestem	0.3	1.7	12-30	L	MZ,D	None	8,9	Fair forage species; palatable by wildlife	<a href="http://plants.usda.gov/factsheet/pdf/fs_scsc.pdf">http://plants.usda.gov/factsheet/pdf/fs_scsc.pdf</a>	
G	<i>Sorghastrum nutans</i>	Indian grass	1.5	6.6	36-96	L	M	Nests	8,9	High to fair forage value; wildlife value	<a href="http://plants.usda.gov/factsheet/pdf/fs_sonu2.pdf">http://plants.usda.gov/factsheet/pdf/fs_sonu2.pdf</a>	
<b>Graminoids subtotal: 9</b>												
A	<i>Achillea millefolium</i>	common yarrow	0.03	2	12-30	E	MZ, D	Low	4,5,6,7,8,9	Low palatability to livestock (tend to avoid)	<a href="http://www.fs.fed.us/database/feis/plants/forb/achmil/all.html">http://www.fs.fed.us/database/feis/plants/forb/achmil/all.html</a> <a href="http://plants.usda.gov/plantguide/pdf/pg_acmio.pdf">http://plants.usda.gov/plantguide/pdf/pg_acmio.pdf</a>	
L	<i>Astragalus canadensis</i>	Canada milk vetch	0.19	1.2	12-48	M	MZ, D	Low	7,8	Palatable; quality forage	<a href="http://www.plant-materials.nrcs.usda.gov/pubs/ndpmc57521.pdf">http://www.plant-materials.nrcs.usda.gov/pubs/ndpmc57521.pdf</a> <a href="http://plant-materials.nrcs.usda.gov/pubs/ndpmcpgcamlk.pdf">http://plant-materials.nrcs.usda.gov/pubs/ndpmcpgcamlk.pdf</a>	
L	<i>Dalea candida</i>	white prairie clover	0.19	1.3	12-30	M	MZ, D	Medium	6,7,8	Good forage quality, but low yield; palatable and nutritious forage; wildlife value; can be overgrazed	<a href="http://ngj.uwpress.org/content/5/2/152.full.pdf">http://ngj.uwpress.org/content/5/2/152.full.pdf</a> <a href="http://www.plant-materials.nrcs.usda.gov/pubs/kspmcpg7797.pdf">http://www.plant-materials.nrcs.usda.gov/pubs/kspmcpg7797.pdf</a>	
L	<i>Dalea purpurea</i>	purple prairie clover	0.31	1.7	12-30	M	MZ, D	Very High	7,8	Good forage quality, but low yield; excellent forage but can be overgrazed	<a href="http://ngj.uwpress.org/content/5/2/152.full.pdf">http://ngj.uwpress.org/content/5/2/152.full.pdf</a> <a href="http://www.plant-materials.nrcs.usda.gov/pubs/kspmcpg7796.pdf">http://www.plant-materials.nrcs.usda.gov/pubs/kspmcpg7796.pdf</a>	
A	<i>Helianthus maximiliani</i>	Maximilian's sunflower	0.08	0.4	48-60	E	M, MZ	High	9,10	Palatable but low protein; can be grazed into fall. May increase under grazing pressure.	<a href="http://plants.usda.gov/plantguide/pdf/pg_hema2.pdf">http://plants.usda.gov/plantguide/pdf/pg_hema2.pdf</a>	
F	<i>Monarda fistulosa</i>	wild bergamot	0.01	0.2	24-48	M	MZ, D	Very High	7,8	Moderate palatability	<a href="http://plants.usda.gov/java/charProfile?symbol=MOFI">http://plants.usda.gov/java/charProfile?symbol=MOFI</a>	
F	<i>Potentilla arguta</i>	tall/prairie cinquefoil	0.03	2.4	24	L	MZ, D	Medium	6,7,8,9	Low palatability	<a href="http://plants.usda.gov/java/charProfile?symbol=POAR7">http://plants.usda.gov/java/charProfile?symbol=POAR7</a>	
A	<i>Ratibida pinnata</i>	gray-headed/yellow coneflower	0.09	1	36-72	M	MZ	Medium	7,8,9	Substitute <i>Ratibida columnifera</i> in NW MN; young plants offer good forage	<a href="http://plants.usda.gov/factsheet/doc/fs_rapi.docx">plants.usda.gov/factsheet/doc/fs_rapi.docx</a>	
A	<i>Rudbeckia hirta</i>	black-eyed susan	0.07	2.3	12-36	E	MZ	Very Low	7,8,9,10	Moderately grazed by cattle	<a href="http://www.fs.fed.us/database/feis/plants/forb/rudhir/all.html">http://www.fs.fed.us/database/feis/plants/forb/rudhir/all.html</a>	
<b>Forbs subtotal: 9</b>												
<b>Total Species Richness: 18</b>			<b>Total Seeding Rate: 8 lbs/acre</b>		<b>37.9 Seeds/sqft</b>							
<b>Total Cost/Acre: \$188.50</b>			(Opt.) Cover Crop - 25 lbs/acre Oats/Winter Wheat		<b>11 Seeds/sqft</b>							
Seed mix cost estimate based on 2013 pricing												
<p><b>Guid:</b> G = grasses and grasslike species F = forbs (flowering plants) A = flowering plants in the Aster family (Asteraceae) L = nitrogen fixing plants in the legume family (Fabaceae)</p> <p><b>PLS:</b> Pure live seed (% pure * % viable / 100) (See, for example: <a href="https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/apmctn9045.pdf">https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/apmctn9045.pdf</a>)</p> <p><b>Successional stage:</b> E = early M = mid L = late</p> <p><b>Hydrologic zone:</b> E = emergent S = saturated M = moist MZ = mesic D = dry</p> <p><b>Source:</b> Minnesota CP25 Economy Mix (Shooting Star Nursery) with additions/substitutions selected from the Native Seed Mix Design Worksheet and other sources. For more information, see: <a href="http://nature.org/MNPrarieRestorationGuides">nature.org/MNPrarieRestorationGuides</a>.</p>												
<b>Supplemental Species List (Optional substitutes or additions)</b>												
L	<i>Amorpha canescens</i>	lead plant			18-48	L	MZ, D	Very High	6,7,8	Thought to be grazing-tolerant; palatable to livestock and wildlife	<a href="http://plants.usda.gov/plantguide/pdf/pg_amca6.pdf">http://plants.usda.gov/plantguide/pdf/pg_amca6.pdf</a> <a href="http://www.fs.fed.us/database/feis/plants/shrub/amocan/all.html#ImportanceToWildlifeAndLivestock">http://www.fs.fed.us/database/feis/plants/shrub/amocan/all.html#ImportanceToWildlifeAndLivestock</a>	
L	<i>Desmanthus illinoensis</i>	Illinois bundle flower			60		MZ, D		7,8	Recommended for forage value; can improve forage quality of native grasses; relatively high forage yield	<a href="http://plants.usda.gov/plantguide/pdf/pg_dell.pdf">http://plants.usda.gov/plantguide/pdf/pg_dell.pdf</a> <a href="http://ngj.uwpress.org/content/5/2/152.full.pdf">http://ngj.uwpress.org/content/5/2/152.full.pdf</a>	
L	<i>Desmodium canadense</i>	Canada tick trefoil			24-48	M	MZ	Low	7,8	Historically rare in E.S. 4. Can improve forage quality of native grasses; relatively high yield	<a href="http://ngj.uwpress.org/content/5/2/152.full.pdf">http://ngj.uwpress.org/content/5/2/152.full.pdf</a>	
A	<i>Echinacea pallida/angustifolia</i>	narrow-leaved purple coneflower			12-48	L	MZ, D	High	6,7	Nutritious and palatable; may decrease under grazing pressure (reseed if necessary); wildlife value	<a href="http://plants.usda.gov/plantguide/pdf/pg_ecpa.pdf">http://plants.usda.gov/plantguide/pdf/pg_ecpa.pdf</a>	
A	<i>Helianthus pauciflorus</i>	stiff sunflower			12-48	M	MZ, D	High	7,8	Quality forage	<a href="http://plants.usda.gov/factsheet/pdf/fs_hepa19.pdf">http://plants.usda.gov/factsheet/pdf/fs_hepa19.pdf</a>	
G	<i>Koeleria macrantha</i>	junegrass			12-24	L	D	None		Good forage value	<a href="http://plants.usda.gov/plantguide/pdf/pg_koma.pdf">http://plants.usda.gov/plantguide/pdf/pg_koma.pdf</a>	
L	<i>Lespedeza capitata</i>	round-headed bush clover			12-24	M	MZ, D	Low	7,8	Cattle prefer, and possibly grazing tolerant; relatively high yield	<a href="http://ngj.uwpress.org/content/5/2/152.full.pdf">http://ngj.uwpress.org/content/5/2/152.full.pdf</a>	
A	<i>Liatris aspera</i>	rough blazing star			24-36	L	MZ, D	High	7,8,9	<i>Liatris</i> spp. have fair to good forage value & wildlife benefit Sand specialist; good forage value. Possible substitute for <i>E. virginicus</i> on very dry, sandy sites	<a href="http://plants.usda.gov/factsheet/pdf/fs_lipu.pdf">http://plants.usda.gov/factsheet/pdf/fs_lipu.pdf</a>	
G	<i>Sporobolus cryptandrus</i>	sand dropseed			12-36	L	MZ, D	None	7,8		<a href="http://plants.usda.gov/factsheet/pdf/fs_spcr.pdf">http://plants.usda.gov/factsheet/pdf/fs_spcr.pdf</a>	