

**2022 GLBRC Marginal Lands Experiment (MLE) Agronomic Protocols**  
Spring 2022

G5: Perennial Grass – Monoculture Switchgrass	
Planting	<b>No planting planned</b>
Harvest	<p>Harvest post killing frost (or after Oct 1) of N+ and N- sections</p> <ul style="list-style-type: none"> <li>➤ See rainout protocol for harvest area.</li> <li>➤ Sub sample taken for moisture correction and analysis.</li> <li>➤ Remove remaining crop from plots with Kemper harvester.</li> </ul>
Fertilization	<p>Apply 56 kg N ha<sup>-1</sup> to +N side of each plot at green up of warm season grasses</p> <ul style="list-style-type: none"> <li>➤ ESN broadcast @ 114 lb/A (polymer coated urea).</li> <li>➤ <i>Soil agronomic fertility samples will be pulled annually and analyzed on a 3-year cycle. The “CRP” P, K, recommendations from the UW Nutrient application guidelines (Bulletin A2809) will be used to calculate P &amp; K application rates. A “CRP” based minimum pH threshold of 5.5 will be used as the liming target for our perennial grass and poplar based crop systems.</i></li> </ul>
Weed Control	<p><b><i>As needed: Glyphosate in plots with quackgrass issues IF HERBICIDE CAN BE APPLIED PRIOR TO PLANTS BREAKING DORMANCY.</i></b></p> <p><b>Pre-emergence:</b></p> <ul style="list-style-type: none"> <li>• Glyphosate: 1.13 lb/A acid equivalent</li> </ul> <p><b>Post-emergence:</b></p> <ul style="list-style-type: none"> <li>• 2,4-D ester 0.61 l ha<sup>-1</sup> (8oz ac<sup>-1</sup>)</li> </ul>
Rainout shelter	See Rainout Shelter protocol (Leave Hancock R2 shelter out)
Notes	

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G6: Perennial Grass – Monoculture Miscanthus		
Planting	No planting planned	Replant as needed in May or early June to fill gaps caused by poor germination and/or winter kill <ul style="list-style-type: none"> <li>• Row spacing: 30"</li> <li>• Plant spacing (in row): 30"</li> <li>• Plant rhizomes ~4" deep</li> </ul>
Harvest	Harvest post killing frost (or after Oct 1) of N+ and N- sections <ul style="list-style-type: none"> <li>➢ Take 1 pass in center of each split, record harvest weight.</li> <li>➢ Sub sample taken for moisture correction and analysis.</li> <li>➢ Remove remaining crop from plots with Kemper harvester.</li> </ul>	
Fertilization	Apply 56 kg N ha <sup>-1</sup> to +N side of each plot at green up of warm season grasses <ul style="list-style-type: none"> <li>➢ ESN broadcast @ 114 lb/A (polymer coated urea).</li> </ul>	
Weed Control	<b><i>As Needed: IF HERBICIDE CAN BE APPLIED PRIOR TO PLANTS BREAKING DORMANCY.</i></b> <b>Pre-emergence:</b> Glyphosate: 1.13 lb/A acid equivalent <b>Post-emergence:</b> <ul style="list-style-type: none"> <li>• 2,4-D ester 0.61 l ha<sup>-1</sup> (8oz ac<sup>-1</sup>)</li> </ul>	
Notes	No planting at Wisconsin sites	

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G7: Perennial Grass – Multi-species	
Planting	<b>No planting planned</b>
Harvest	See G6 for harvest details.
Fertilization	See G6 for fertilization details.
Weed Control	<p><b><i>As needed: Scout for Canada rye, limit herbicide options accordingly: IF HERBICIDE CAN BE APPLIED PRIOR TO PLANTS BREAKING DORMANCY.</i></b></p> <p><b>Pre-emergence (options):</b></p> <ul style="list-style-type: none"> <li>• Glyphosate: 1.13 lb/A acid equivalent</li> </ul> <p><b>Post-emergence:</b></p> <ul style="list-style-type: none"> <li>• 2,4-D ester 0.61 l ha<sup>-1</sup> (8oz ac<sup>-1</sup>)</li> </ul>
Notes	

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G8: Short-rotation trees (Poplars)	
Planting	<p><b>NO REPLANTS</b></p> <p>Replant as needed</p> <ul style="list-style-type: none"> <li>➤ Row spacing: 8'</li> <li>➤ Plant spacing (in row): 5'</li> <li>➤ Plant poplar "whips" with 1 bud above ground surface</li> </ul>
Harvest	NA
Fertilization	Fertilize Nitrogen in 2022 (ESN @ 140 lb/A N)
Weed Control	<p>Burndown: as needed (hand applied)</p> <ul style="list-style-type: none"> <li>➤ Mow as needed</li> <li>➤ POAST for grass (1 pint/A )</li> </ul>
Notes	

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G9: Old Field Community	
Planting	N/A
Harvest	See G6 for harvest details.
Fertilization	See G6 for fertilization details.
Weed Control	None
Notes	

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G10: Native Prairie	
Planting	<b>No planting planned</b>
Harvest	See G6 for harvest details.
Fertilization	See G6 for fertilization details.
Weed Control	No weed control in 2018.
Notes	

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G11: Undisturbed Check	
Planting	None
Harvest	No field harvest.
Fertilization	See G6 for fertilization details.
Weed Control	Use herbicide as needed to control encroachment of woody species (cut plant off to ground level. Spray or paint the cut surfaces of freshly cut stumps with undiluted Tordon RTU). No other herbicide applications to be made.
Notes	

**References**

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Vogel, K. P., & Masters, R. A. (2001). Frequency grid-a simple tool for measuring grassland establishment. *Journal of Rangeland Management*, 54(6), 653–655.