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**Impact of Harvest Frequency on Tallgrass Prairie Biomass Production and Species Composition**

Perennial grasslands are a potential biofuel feedstock, but little is known about the effects of harvesting these grasses.

**The Science**

Native perennial grasslands, which can be planted on marginal lands, are a potential feedstock source for lignocellulosic biofuel production. And yet more information is needed to understand how management practices such as frequency or timing of harvesting can affect their productivity and community composition.

**The Impact**

This research suggests that the best practice for maximizing biomass production – especially on sites where C4 grasses dominate – is a single harvest at the end of the season. However, two harvests can produce the same amount of biomass at more diverse sites, and may support other ecosystem services.

**Summary**

Great Lakes Bioenergy Research Center scientists used two sites in southwestern Michigan to compare the effects of once- and twice-annual harvesting regimes on biomass production and plant community composition. Despite being planted with the same mix of prairie species, the plant communities that established at the two sites were markedly different. Whereas the site dominated by C4 warm season grasses generally produced more biomass with single harvests than double harvests, total biomass production was not impacted by harvesting frequency at the more diverse site. Further, despite expectations that a summer harvest would result in increased plant diversity, harvesting in summer had only small effects. Overall, the study results indicate that a single end-of-season harvest is the best way to maximize biomass production in native perennial grasslands, especially on sites dominated C4 by grasses. However, a double harvest on more diverse sites could result in increasing other ecosystem services without negatively impacting biomass yield.

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**Publications**

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**Related Links**

<http://dx.doi.org/10.1016/j.biombioe.216.06.012>

**PM Recommendation for SC Web Publication**