

Dec 3rd, 12:00 AM

Production cost budgets for perennial grass systems

Mainul Hoque
Iowa State University

Georgeanne Artz
Iowa State University, gartz@iastate.edu

Chad Hart
Iowa State University, chart@iastate.edu

Follow this and additional works at: <https://lib.dr.iastate.edu/icm>

 Part of the [Agricultural and Resource Economics Commons](#), [Agricultural Economics Commons](#), and the [Economics Commons](#)

Hoque, Mainul; Artz, Georgeanne; and Hart, Chad, "Production cost budgets for perennial grass systems" (2014). *Proceedings of the Integrated Crop Management Conference*. 7.

<https://lib.dr.iastate.edu/icm/2014/proceedings/7>

This Event is brought to you for free and open access by the Conferences and Symposia at Iowa State University Digital Repository. It has been accepted for inclusion in Proceedings of the Integrated Crop Management Conference by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

Production cost budgets for perennial grass systems

Mainul Hoque, Graduate Student, Iowa State University; Georgetanne Artz, Assistant Professor of Economics, Iowa State University; Chad Hart, Associate Professor of Economics and Extension Economist, Iowa State University

To reach the cellulosic biofuel mandate set for 2022 in the US, perennial grasses, such as Giant Miscanthus and the newly introduced “Liberty” switchgrass, are expected to play a significant role as a promising feedstock for cellulosic ethanol. These grasses can grow well in the many parts of the U.S., especially in areas with ample rainfall. Miscanthus and switchgrass can adapt well to marginal land, which implies significant potential for marginal land currently under crop or forage production, and land currently enrolled in the Conservation Reserve Program to be converted into future commercial-scale biomass production.

As part of the CenUSA grant project, we are examining production cost estimates for Miscanthus and Liberty switchgrass, detailing inputs required and procedures involved in establishment, yearly operation, and harvest.

Estimated costs of production

The estimated cost of production is presented in four sections, reflecting particular production years in the life of this perennial crop. The first section presents production cost estimates for pre-establishment. Section 2 estimates costs of production in the establishment year. Utilizing an amortization factor, a pro-rated estimate is also provided illustrate the yearly cost of establishment spread across the life of the stand. Section 3 provides cost of production estimates for the second year of production. Since grass stands mature by year 3, the cost estimates are assumed to remain the same from year 3 and beyond. These estimates are shown in section 4. For the last 3 sections, the production costs are divided into (i) pre-harvest machinery costs, (ii) operation costs, and (iii) harvesting costs. For simplicity, we have not considered storage and transportation costs to the processing facility in this report.

Information used in developing this budget was obtained from existing agronomic research, expert opinions, and economic data such as the [2014 Iowa Farm Custom Rate Survey](#) (Ag Decision Maker, File A3-10). Input prices, fertilizer, chemical and rhizome costs were taken from existing crop enterprise budgets published by Iowa State Extension or from enterprise budgets developed by Extension services at other universities. Since there is currently no reliable cost estimate for rhizome planting from commercial sources, we have utilized the rhizome planting materials and cost from the document “Proposed Plan for Miscanthus Grass” from the University of Iowa’s Miscanthus Pilot Project. Herbicides prices are taken from “Miscanthus Budget for Biomass Production”, published by Penn State Extension.

References

Hoque, M., Artz, G., and C. Hart. 2014. Estimated Cost of Establishment and Production of Miscanthus in Iowa. Iowa State University Extension and Outreach, Ag Decision Maker, File A1-28.