

# Switchgrass for pellet production in Ukraine. First results.

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## Introduction

Switchgrass is one of the main model energy crops being developed in North America and more recently in Western Europe. It is one of the promising crops that may play a role in tapping into the huge Ukrainian biomass potential that has only recently started to develop. This potential especially exists on lower quality soils which have often been abandoned or are to some extent not being used. Utilising these lands should make it possible to produce large quantities of biomass with no or limited indirect land use change (ILUC).

Experiments have been established since 2008 at 2 different sites in the Ukraine to test best adapted switchgrass varieties, yield potential, establishment methods, fertilisation and quality for thermal conversion (to heat and electricity) and possibly paper pulp and second generation biofuels. Results show that many varieties are adapted to Ukrainian conditions and that switchgrass can be seeded (at low cost) in Ukraine.

Here we present the first results of experiments with the switchgrass variety Cave-in-Rock which appears well adapted to local conditions, giving good yields and winter survival rates.

## Experimental set-up

Experiments were established at a low soil quality site (Yaltushka) and at a high soil quality site (Veselyi Podil) in approximately 50m<sup>2</sup> square plots in 4 replications. Experiments were established by seed according to recommendations for Europe. No fertilisation was applied.

location	Yaltushka	Veselyi Podil
Soil	Grey podzolized Eroded lightly Mid loam, 1,87% Humus and 81 mg/kg N, pH 5,8	Black soil, deep, low level of humus lightly salt. 4,30% Humus and 109 mg/kg N, pH 6,9
Plot size	50m <sup>2</sup>	50m <sup>2</sup>
Seeding date	May 2009	May 2009
Harvest date	End of October 2010	End of October 2010

*Switchgrass in Yaltushka at the end of the second growing season, October 2010.*



## Results

Second year dry matter yields ranged between 12,6 ton DM at the low quality site and 21,4 ton DM at the high soil quality site when harvested at the end of the growing season (October). Moisture contents ranged from 22,2 and 36,8 %.

Location	Fresh matter MT/ha	Moisture content, %	Dry matter MT/ha
Yaltushka	20,0	36,8	12,6
Veselyi Podil	27,5	22,2	21,4

In order to make storage possible later (early spring) harvesting, when moisture content is lower, will be required. This will reduce DM yield but will also increase biomass quality due to leaching out of K, Na and Cl, and also will increase stand persistence.

## References

Elbersen, H.W., D.G. Christian, N. ElBassam, W. Bacher, G. Sauerbeck, E. Alexopoulou, N. Sharma, I. Piscioneri, P. de Visser, and D. van den Berg. 2001. Switchgrass variety choice in Europe. Aspects of Applied Biology 65, pp. 21-28.

[www.switchgrass.nl](http://www.switchgrass.nl)

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