

THE CUP PLANT (*SILPHIUM PERFOLIATUM*) - AN ALTERNATIVE BIOGAS CROP -

Michael Conrad, Andrea Biertümpfel, Armin Vetter

Thüringer Landesanstalt für Landwirtschaft, Naumburger Str. 98, 07743 Jena



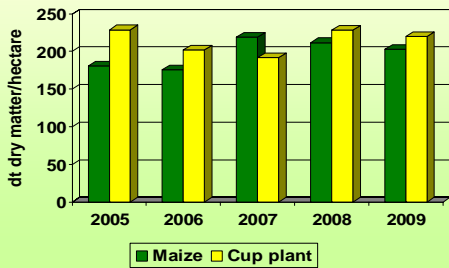
INTRODUCTION

Presently, maize, cereals and forage crops (grass mixtures) are predominantly used as coferments in biogas plants.

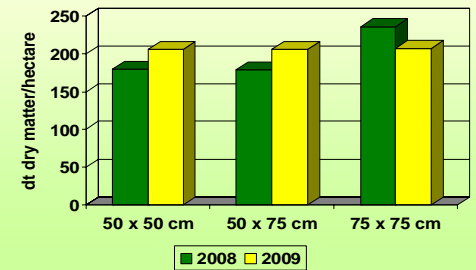
Prerequisites for the economic use of co-substrates are their suitability for cultivation, high biomass yields at certain dry mass ratios in order to produce stable silages and good availability of relevant substances for methane producing bacteria.

The cup plant fulfills these requirements and as a composite it offers at the same time a true alternative for farmers, which is as well reflected by their interests and increasing requests for plants and seeds throughout Germany.

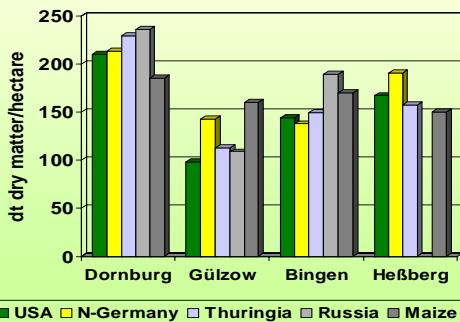
Dry mass yield of the cup plant in comparison to maize (Dornburg 2005 - 2009)



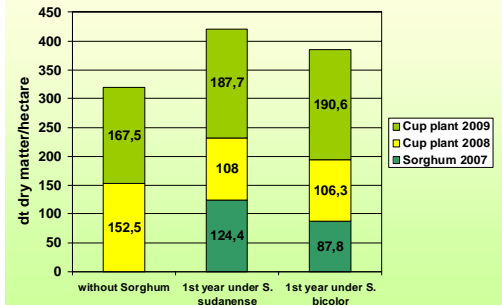
Influence of the planting distance on the dry mass yield of the cup plant (Dornburg 2008 - 2009)



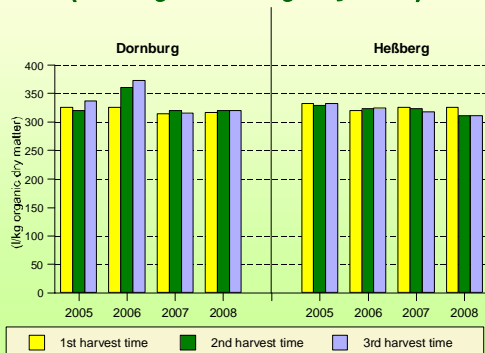
Influence of accession and location on the dry mass yield of the cup plant (\bar{x} 2008 - 2009)



Planting of cup plant as catch crop under Sorghum in the 1st year (Dornburg 2007 - 2009)



Influence of harvest time and location on the theoretical methane content of the cup plant (Dornburg and Heßberg 2005 - 2008)



CONCLUSION

It is necessary to optimize the cropping system and further processing of this permanent crop, in order to establish the cup plant successfully as a coferment in agricultural biogas plants. Therefore, studies have been conducted testing direct seed procedures, seed as catch crop and provenance trials. Even the variation of sowing or planting dates, times of harvest or primary processing/ensiling (different silage additives) still offer numerous opportunities to increase biogas and methane yields. In the future, special attention should be turned to the selection of best adapted and suited plant material from different provenances, increasing methane and biogas yields and supplying homogeneous plant material with consistent substances.

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