



Yield parameters of energy grass species and possibilities of their utilisation

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In connection with rise of global energy consumption use of alternative resources is more and more actual topic. Importance of renewable resources utilization has intensified with regard to decrease of fossil fuels, their price rise and consequent risk of eventual energy breakdown due to their shortage. Among others, plant biomass utilization is one of these renewable resources. Today in many countries large agricultural lands lie fallow and can not be used for food production in the long term. However, with respect to sustainable development this land needs to be agriculturally managed and biomass production might be just one of the suitable ways, whereas use of available energy grass species with adequate characteristics comes into question. This work is focused on yield monitoring of selected grass species that are expected to be used for energy purposes. Species cocksfoot (*Dactylis glomerata*), tall oat grass (*Arrhenatherum elatius*) and reedgrass (*Phalaroides arundinacea*) were cultivated in three locations whereas aerial biomass yield and dry matter content was monitored in three harvests periods (before spiring phase, winter beginning – after first frosts, in spring). As additional cultivation requirements of selected grass species were assessed. Based on comparison of yield parameters in particular locations was chosen the most suitable species and overall efficiency of utilization for energy purposes. As far as the biomass production is concerned tall oat grass proved the best yields – 7,08 t/ha before spiring, 10 t/ha after freeze and 5,92 t/ha in spring harvest. However, dry matter content plays important role as well whereas the critical limit for burning is 80 %. This parameter was fulfilled only by reedgrass which also is cultivation less-demanding. Suitability of harvesting term is dependent on subsequent utilization of biomass, e.g. for biogas production is the most optimal harvest-time before spiring.