

# Evaluation of thermal characteristics of different sources of bio-feedstock for solid fuel and pyrolysis boilers

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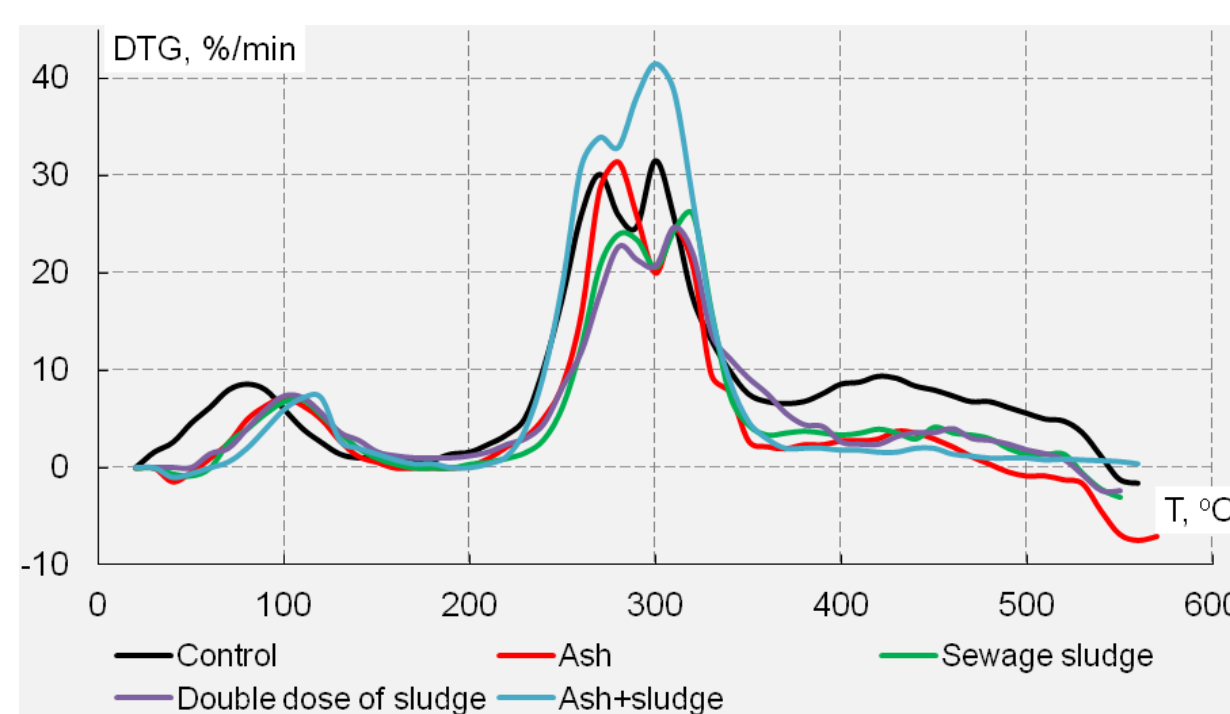
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Cultivation of energy crops and fast-growing trees on marginal lands makes sense to investigate the use “waste nutrients” that are locally or regionally available to promote high yields of bio-feedstock. The high productivity of energetic plant plantations can be provided through the use of the municipal sewage sludge as fertilizer. The Pokrov experimental station of DSAEU includes mini greenhouse and a mini solar power station with a capacity of 5 kW to cultivate Miscanthus and Swithgrass from rhizomes and seedlings of some trees clones obtained *in vitro*.

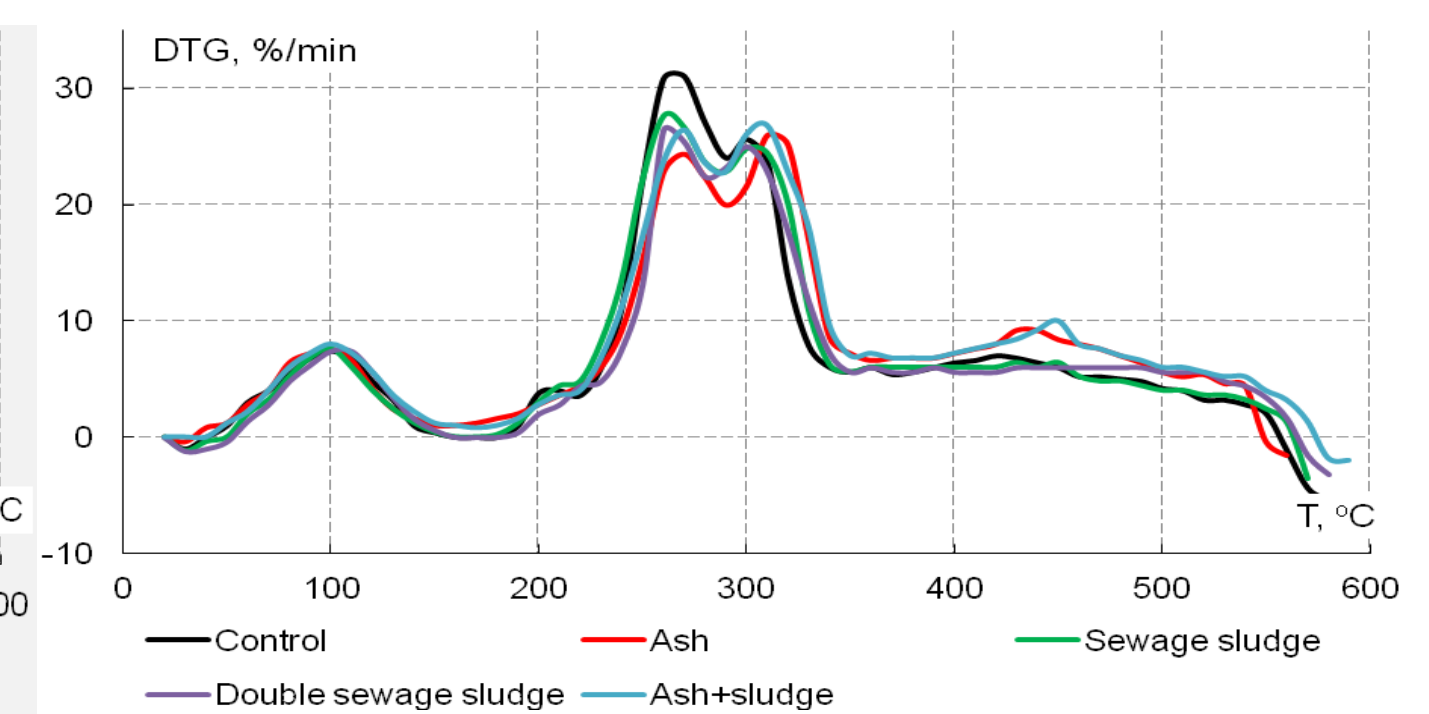
DTG curves of the thermal decomposition of Switchgrass biomass



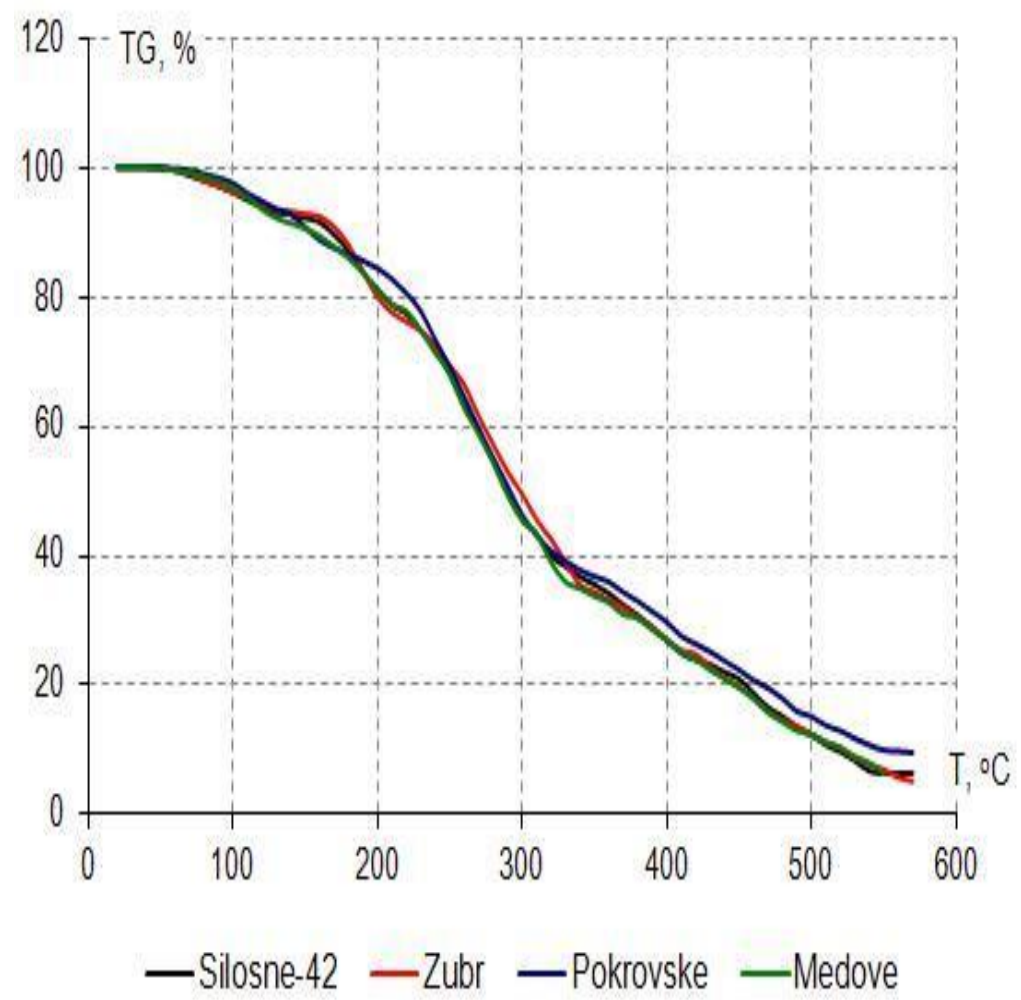
The cultivation of rhizomes and seedlings in greenhouse using solar panels



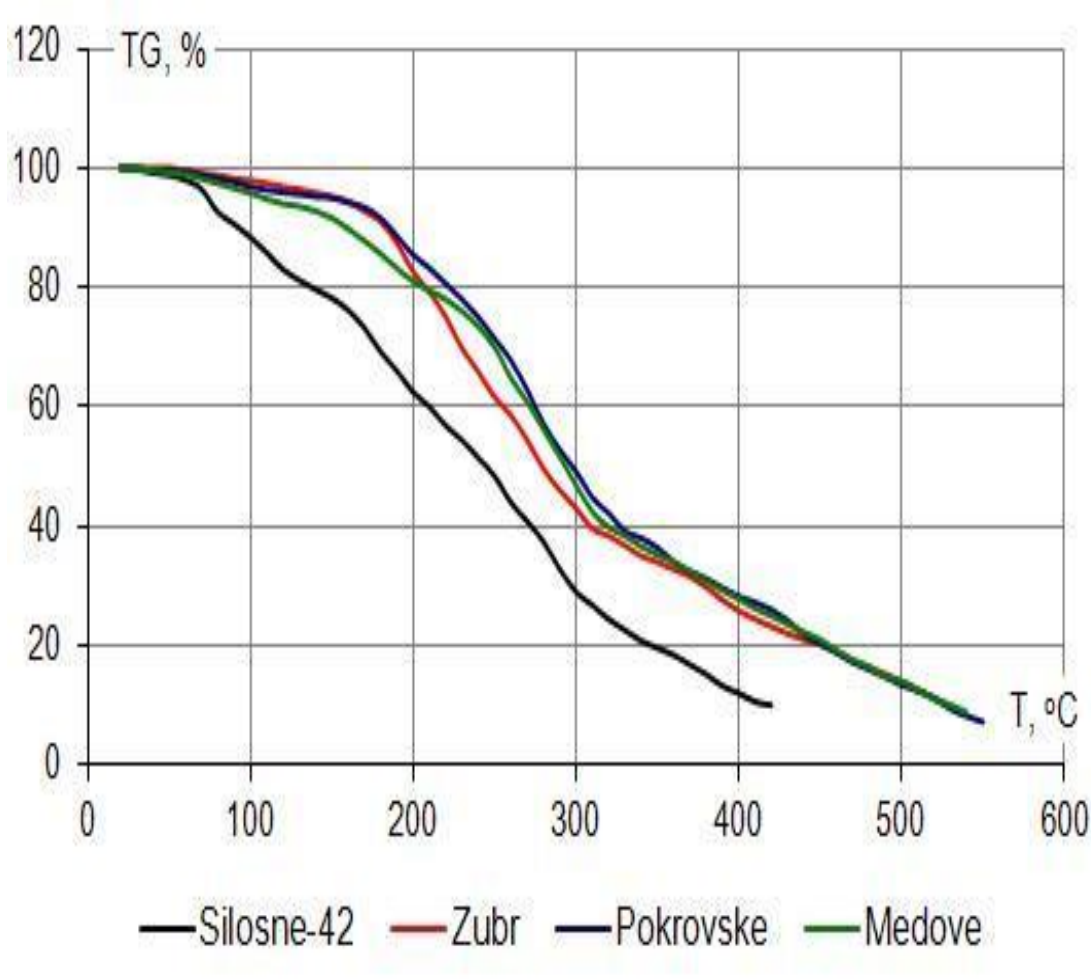
Leaves



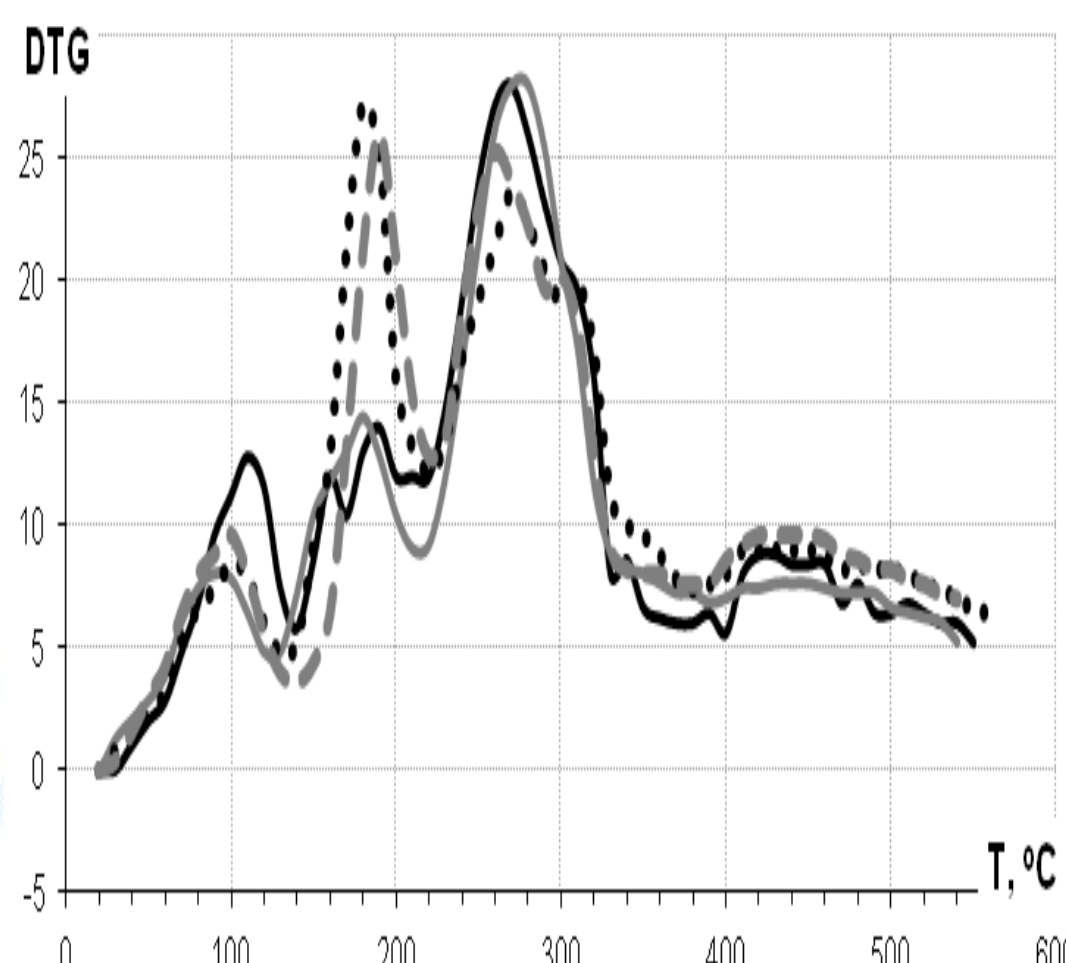
Stems



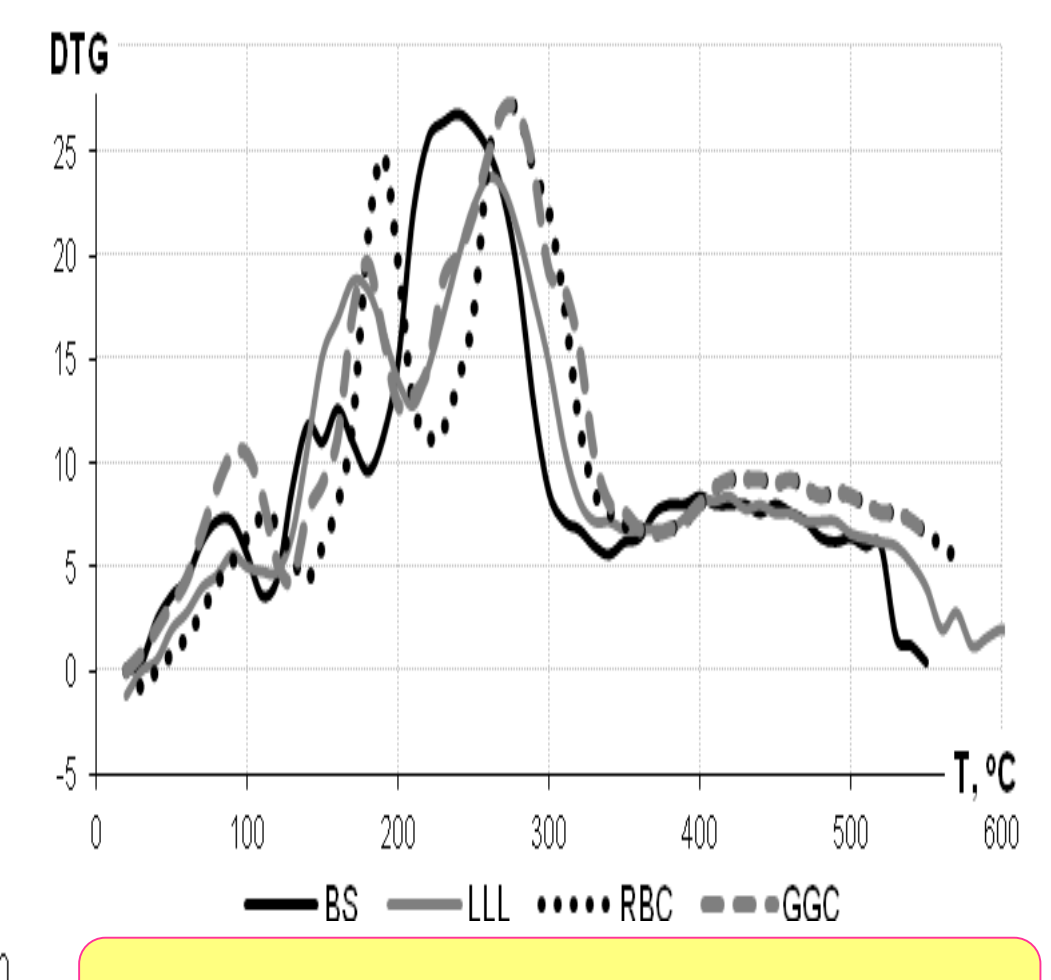
Black Soil



Loamy like Loess

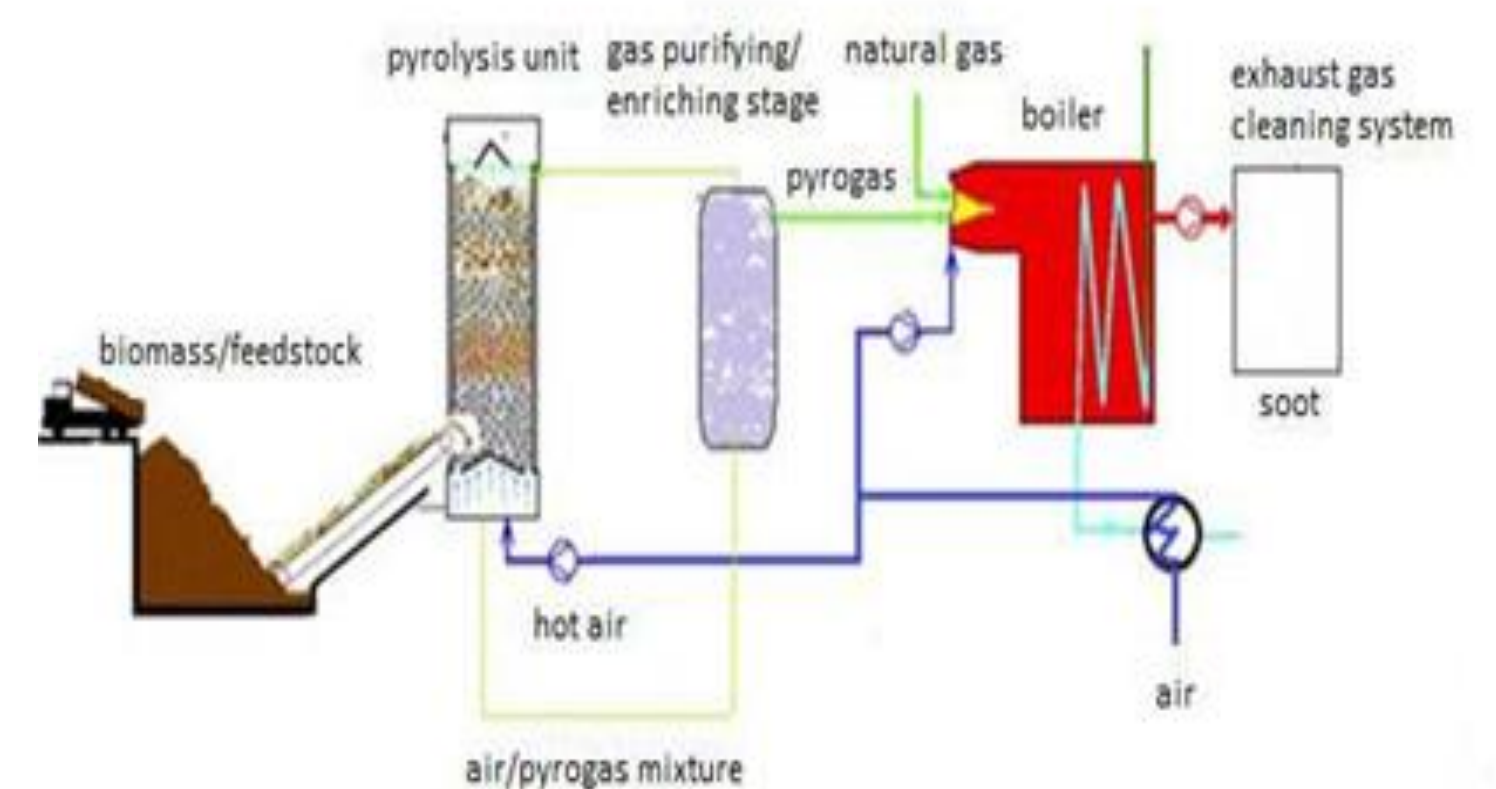


Control



with sewage sludge (30t/ha)

The pilot scale study was dedicated to establishing of dependencies of the process parameters on the composition of pyrolysis products and finding of the optimal process intensity to obtain certain gaseous products composition.



General scheme of life cycle of biomass production in marginal land for combustion in pyrolysis boiler equipment.