



THE NEW VARIETY „MARIA” OF JERUSALEM ARTICHOKE *HELIANTHUS TUBEROSUS* L.



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The new variety „MARIA” of Jerusalem artichoke, *Helianthus tuberosus* L. has been created by individual breeding of local and introduced plant taxa in NBGI, can be used for several purposes: aerial parts as fodder and energy biomass, tubers as feed and by-products of inulin extraction. Melliferous and ornamental crop.

The green mass yield 65-80 t/ha, with 38-43 % leaves content. The biochemical composition and nutritive value of green mass: organic matter 86.9-91.7 %, crude protein 9.8-12.5 %, crude fiber 29.6-36.7%, ADF 34.3-36.9%, NDF 49.6-56.2 %, ADL 5.0-6.5 %, cellulose 29.3-30.4%, hemicellulose 15.3-19.3%, total soluble sugars 23.5-26.2%, digestible dry matter 543-613g/kg, digestible organic matter 524-597g/kg, metabolizable energy 9.77-10.06 MJ/kg, net energy for lactation 5.79-6.08 MJ/kg, RFV=100-117.

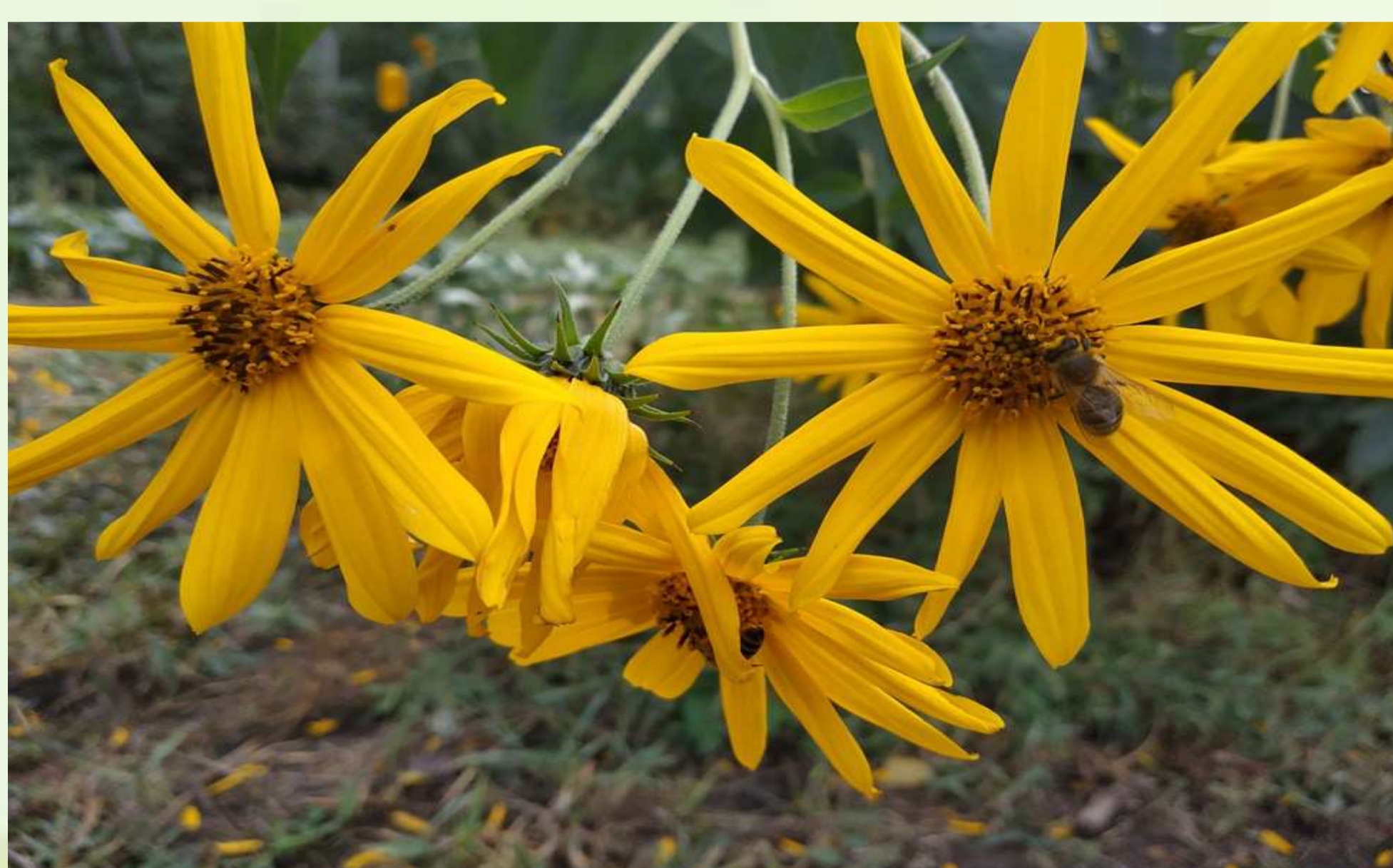


The prepared silage from green mass was characterized by agreeable colour with specific smell, pH 3.85 - 4.37, 89.1% organic matter, 13.2 % crude protein, 30.7 % crude fiber, 32.8% ADF, 52.6% NDF, 3.3% ADL, 29.5 % cellulose, 19.8% hemicellulose, 9.0% total soluble sugars, 60.3% digestible dry matter, 52.2% digestible organic matter, 12.47 MJ/kg digestible energy, 10.23 MJ/kg metabolizable energy, 6.26 MJ/kg net energy for lactation, RFV=112.

The green mass and silage substrates for anaerobic digestion, have optimal C/N ratio, amount of lignin and hemicellulose, biomethane potential varied from 290 to 329 l/kg ODM.



The chopped dry stem biomass have gross calorific value 18.97 MJ/kg and ash content 1.03%, which make them suitable to be used as alternative source of energy: briquettes with 800-848 kg/m³ specific density and pellets 950 kg/m³ specific density, as well as substrate for the production of cellulosic ethanol, the theoretical ethanol potential constituted 550-580 l/t dry matter.



The tubers yields 45-53 t/ha, contain 240.2-257.3 g/kg dry matter with 56.7% inulin and 5.1% other carbohydrates, eligible for feed and raw material for the pharmaceutical and food industry.



Melliferous plant available for 20-30 days September –October, with potential 20-40 kg/ha of honey.

The cultivar „MARIA” is suitable for the phyto-amelioration and the use of marginal, eroded and polluted lands.

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“Mobilization of plant genetic resources, plant breeding and use as forage, melliferous and energy crops in bioeconomy”

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