

PROSPECTS FOR THE UTILIZATION OF THE PRAIRIE CORDGRASS *SPARTINA PECTINATA* FOR BIOENERGY PRODUCTION IN MOLDOVA

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Prairie cordgrass *Spartina pectinata* Bosc ex Link, Poaceae Family, a productive C4 perennial rhizomes grass native to North America, has the freezing and frost tolerance required for a higher-latitude bioenergy crop. This research was aimed at evaluating the biomass energy indices of the *Spartina pectinata*, grown in monoculture in collections of the National Botanical Garden (Institute) Chișinău. The physical and mechanical properties of dry biomass and biosolid fuel were determined according to the national standards in Laboratory of Biosolid Fuel SAUM, cell wall components have been determined by NIRS technique PERTEN DA 7200 of the Research and Development Institute for Grassland Brașov, Romania. It has been determined that prairie cordgrass biomass had excellent gross calorific value (19.5-19.7 MJ/kg). The net calorific value and durability of solid fuel was significantly higher than corn stems fuel. The analysis of cell wall components revealed that *Spartina pectinata* substrates contained 453 g/kg cellulose, 294 g/kg hemicellulose, 82 g/kg acid detergent lignin and the estimated theoretical ethanol yield averaged 552 L/t as compared with 485 L/t in corn stems substrate. The investigated prairie cordgrass

introduced taxa, may be use as multi-purpose feedstock for renewable energy production in Republic of Moldova.

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Key words: biomass, cell wall components, solid fuel, *Spartina pectinata*, theoretical ethanol potential