

THE CELL WALL COMPONENTS AND ENERGY VALUE OF *TRITICUM SPELTA* L. STRAW

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The genus *Triticum* is the most important among the cultivated plants essential to human nutrition and for its spreading throughout the world. It is comprising biological species at the diploid, tetraploid, and hexaploid levels. Spelt wheat *Triticum spelta* is currently a topic of great interest for researchers. The main objective of this research was to evaluate cell wall components and the energy potential of spelt wheat straw collected in an experimental field of the Institute of Genetics, Physiology and Plant Protection of Moldova State University. The cell wall components have been determined by NIRS technique PERTEN DA 7200 of the Research and Development Institute for Grassland Brașov, Romania and energy indices of biomass in the Laboratory of Biosolid Fuel of Technical University of Moldova. It has been determined that collected spelt wheat straw contained 932 g/kg dry matter. The comparative

analysis of cell wall components revealed that spelt wheat straw contained 437g/kg cellulose, 277 g/kg hemicellulose and 64 g/kg acid detergent lignin. The estimated theoretical ethanol yield from cell wall carbohydrates averaged 518 L/t in spelt wheat straw substrate. As feedstock for the production solid bio fuel *Triticum spelta* straw was characterised by 18.41 MJ/kg gross calorific and 5% ash content.

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Key words: calorific value, cell wall components, theoretical ethanol potential, *Triticum spelta* straw