

ASSESSMENT OF THE EQUIPMENT FOR CONDITIONING OF THE ENERGETIC BIOMASS

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Abstract. *Herbaceous energy crops would be the main basis for solid bio fuel production in agricultural ecosystem in future. Until 2014 the share of biomass as a fuel in Latvia is 29.2%, which is the highest percentage in the enlarged EU. To the 2020 Latvia has a target for renewable energy resources to be 40% in gross final consumption of energy. In this research are summarized Latvia university of Agriculture (LLU) projects about straw, hemp, reed, reed canary grass and peat mixture briquettes and granules parameters and machinery for it development. It is mentioned, that heating value of herbaceous biomass like straw material is slightly lower than it is for wood. In previous research carried out in LLU Institute of Mechanics was stated that briquettes are more durable if biomass mixtures with peat is used. However briquettes without peat content aligning axial direction in press die is necessary. For conditioning solid herbaceous biofuel where made several equipment – belt feeders, briquettes presses and extruders, belt type dryer, straw and bale shredders. As machinery complex it is design to use pneumatic transport between segments. Also equipment was made for easy transporting, meaning that machinery dimensions are suitable for transporting on main roads. Dimension restriction has negative effect on bale shredders pneumatic transport system. Energy losses in pipelines are reason for clogged transportation system. The energy for particle transporting is reduced with sharp bends and friction on pipeline walls.*

Key words: *Biomass, machinery, herbaceous material, peat content, fuel.*