Device for Measuring the Parameters of Waste Biomass Obtained from the Harvest of Cereals

Radko Mihajlow, Lazar Panaiotov, Svilen Stoianov, Desislava Mihaylova College Dobrich, Dobrich, Bulgaria rmihajlow@abv.bg, panayotoff@abv.bg, svlnstoyanov@yahoo.com, de_c@abv.bg

Keywords: biomass, sensor, measurement, plane mechanism, averaging

The object of study is a device for measuring the biomass waste (BMW), which is mounted on the harvester. An original mechanical design on the base of four linked plane mechanism is proposed and examined by use of a prototype, which equipped with sensors. Experiments conducted under real conditions demonstrate the operability of the device. Information on the amount and parameters of BMW occurs visualized and stored in computer memory. The results of experiments are reported and discussed below, together with the recommendations on device improvement. Conclusions are made about on the importance of information collected, which is a prerequisite for its cost-effective use of BMW.

References

- P. Zlateva, Efektivno izpolzvane na biomasata za proizvodstvo na energia v Bulgaria, Izvestia na sauza na uchenite Varna N. 1, 2012.
- [2] D. Kehaiov, Opredeliane na enrgijnia potncial na ostatachnata biomasa ot zemedelskoto proizvodstvo na Agrotrejd EOOD gr. Iambol, Nauchni trudove na Rusencki universitet N. 52 seria 1.1, pp. 184-187, 2013.
- [3] A. Krisnawati, M. Muchlish Adie, Variability of Biomass and Harvest Index from Several Soybean Genotypes as Renewable Energy Source, Energy Procedia 65, www.sciencedirect.com, (The 3rd Indo-EBTKE ConEx 2014), Indonesia N. 3, pp. 14-21, 2015.
- [4] M. Martinov, D. Djatkov, M. Golub, M. Viskovic, Harvestable biomass of corn, wheat, soybean and sunflower, experiences in Vojvodina (agricultural region of Serbia), Joint Research Centre of the European Commission in collaboration with the Energy Institute Hrvoje Poar, The Scientific Basis for Sustainable Use of Biomass Residues and Wastes for Bioenergy and Biofuels, Zagreb, Croatia 3, 2013.