



A Biobaler WB-55 specifically for harvesting biomass of agricultural and forestry origin in rough conditions and from various types of terrain

Short Rotation Crops (SRC) are harvested after their growth terminates, when leaves shed off the stalks. Harvest can be carried out until plants resume the new plant growing season. In Poland, this is the time period from early November to end of March. SRC stalks should be cut at a height of 10–15 cm above ground.

Willow harvest with a Biobaler combines cutting the stems, their compaction and pressing into bales in a single pass of the machine. A Biobaler cuts and compacts stems with the diameter between 50–80 mm and up to 7 meters long. The Biobaler WB 55 is practically speaking the only willow harvester available on the market that has a flail cutting system.

A Biobaler has a hydraulic machine lifting system, which allows the smooth adjustment of the cutting height during harvest, as well enables circumventing small obstacles in the way of the machine. The lowest cutting height is around 10 cm, and the highest one is 40 cm. The Biobaler WB 55 mulcher head is designed to collect biomass and pass it to the main conveyor. The head is fitted with 50 blades, arranged spirally, which cut and move the biomass above the rotor. There is a feed rotor between the mulcher head and the wrapping chamber which is to pass the biomass evenly to the wrapping chamber. The fixed compaction chamber is 1200 mm in diameter and 1200 in width and contains 8 pressing rollers as well as a conveyor in the back of the chamber, which rotate the biomass, which allows the formation of bales. When the chamber is filled up with biomass, the back door tilts and the tractor driver as well as the wrapping system receive automatic notification, after which a bale is wrapped and pushed outside the chamber.

The productivity of the Biobaler depends on biomass yield per area unit, land relief, power of the tractor, skills of the tractor operator, etc., and can range from 10 to 30 bales per one working hour of the Biobaler and tractor system. The mass of a single bale from fresh SRC stems at a moisture content of 50% varies from 400 to 500 kg. Hence, the average productivity of the system is from 6 to 10 Mg/h.



KEY WORDS

Biobaler, biomass of agricultural and forestry, bales, calorific value

COUNTRY/REGION

Poland

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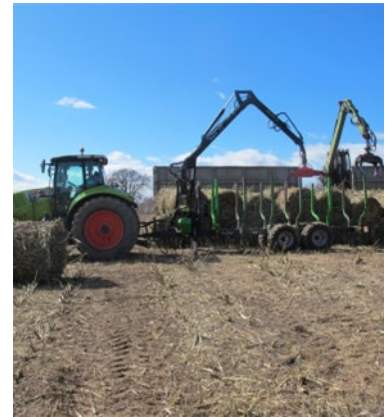
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ADDITIONAL INFORMATION

After harvest, bales can be transported from the plantation and stored in heaps, from which they can be successively taken and shredded into chips according to the demand for solid biofuel. During storage, the moisture content in bales decreases from around 50% in winter to about 20% in autumn, which leads to an increase in the calorific value of biomass from 8 to 15-16 GJ/Mg.



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ABOUT BRANCHES

BRANCHES is a H2020 “Coordinator Support Action” project, that brings together 12 partners from 5 different countries. The overall objective of BRANCHES is to foster knowledge transfer and innovation in rural areas (agriculture and forestry), enhancing the viability and competitiveness of biomass supply chains and promoting innovative technologies, rural bioeconomy solutions and sustainable agricultural and forest management.



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THE PARTNERSHIP

