The Construction Technology of Dryer Silo Materials to Grains Made from Webbing Bamboo ; a Drying Technology Solutions Appropriate to the Empowerment Farmers in Yogyakarta, Indonesia

Abadi Barus, Catur Setyo Dedi Pamungkas, Ajeng Septiana Arlikah

Abstract **-** Indonesia is an agrarian country with the most of it's population work as farmers. One of the popular agricultural commodity in Indonesia are paddy and corn. Production of paddy and corn are increased, but not balanced to development of appropriate technology on farmers. Methods to drying applied by farmers still using sunlight. Drying by this method has some drawbacks, such as differences moisture content of corn grains, time used to dry around 3 days (need more time), and the quality of the products obtained are less good. In addition, the method of drying by using sunlight can't be done when the rainy season arrives. This season the product obtained with less good quality. One solution to the above problems is to create a dryer with simple technology made from webbing bamboo and wood. This technology is applicable to be applied to farmers' groups as well as the creation technology is quite cheap.

The experiment material used in this research will obtained from the corn grains. The equipment used are woven bamboo with a height of 3 meters and a capacity of up to 700 kgs as a silo, gas, burner, blower, bucket elevators, thermocouple, Arduino microcontroller 2560. This tools automatically records all the data of temperature and humidity. After the grain is completed in the process of grain drying grain measured water content with moisture meter.

By using this technology, farmers can save time, energy, and cost to the drying process. In addition, by using this technology the quality of grain moisture content obtained more uniform and have a longer shelf life because the temperature when heating process is controlled. Therefore, this technology is applicable to be applied to the public because the materials used to make the tool easier to find, cheaper, practical, and in the manufacture of the tool made simple with good quality.

Keywords : grains, dryer, moisture content, appropriate technology

Abadi Barus, Bachelor Student of Agricultural Engineering and Biosystem UGM, 55281, Indonesia (Phone : +6282136222500 ; email : abadi.barus@mail.ugm.ac.id)
Catur Setyo Dedi Pamungkas, Bachelor Student of Agricultural Engineering and Biosystem UGM, 55281, Indonesia. (Phone : +6285712673148 ; email : catur.dr@mail.ugm.ac.id)
Ajeng Septiana Arlikah, Bachelor Student of Agricultural Engineering and Biosystem UGM, 55281, Indonesia. (Phone : +6281806277341 ; email : asarlikah@gmail.com)