

Effective Utilization of logging waste in conservation agriculture

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Abstract

In recent years, most farmers are encouraged to apply logging waste in the form of compost or chips to their farms in response to the growing demand for organically grown farm produce. However, these organic amendments are not very effective as they can be easily washed by runoff or strong winds. For effective utilization, logging waste was first converted into chips and then later into biomass boards by the high pressure steam and compression method without using any chemical adhesives. These boards were applied as mulches and evaluated for their roles in conservation agriculture. Our investigations showed that converting wood chips into boards before applying them as mulches in agriculture could result in more benefits such as yield improvement, soil moisture conservation, elimination of weeding or herbicide application, erosion control and an overall improvement in ecological services. Furthermore, impregnating nitrogen into the boards could improve their durability, moisture holding capacities, retarded soil moisture loss and served as a source of nitrogen for crops, thereby boosting their overall function as mulches.

Key Words: Logging waste, high pressure steam technology, biomass boards, conservation agriculture, ecological services