

ABSTRACT

Oyster mushroom (*Pleurotus ostreatus*) is one of the edible mushroom belonging to the genus *pleurotus*. In addition to its delicious taste, this species is also known as a food source rich in antioxidants, offering various health benefits such as lowering cholesterol levels, preventing high blood pressure (hypertension), and inhibiting the growth of cancer cells. The application of eco-enzyme and rice washing water as additional nutrients is an effort to increase the production of white oyster mushrooms. This study aims to examine the effect of eco-enzyme and rice washing water application, as well as their interaction, on the growth and yield of white oyster mushroom cultivation. The research was conducted at the experimental field and Agroecotechnology Laboratory, Faculty of Agriculture, Malikussaleh University, from May to July 2025. The study used a Completely randomized design with a factorial pattern. The factors studied were growth media (M) and eco-enzyme application (E). The first factor was eco-enzyme application: E0 = 0 ml/l, E1 = 10 ml/l, E2 = 15 ml/l and waste washed water rice application: L0 = 0 ml/baglog, L1 = 30 ml/baglog and L2 = 40 ml/L each baglog. Analysis of variance showed that eco-enzyme application had a highly significant effect on the number of pinheads in the first harvest. It also had a significant effect on the number of pinheads in the second harvest, fresh weight in the first harvest, cap diameter in the first harvest, and number of fruiting bodies harvested. This study showed that the combination of eco-enzyme and rice washing water has the potential to significantly increase oyster mushroom productivity. Based on the analysis of variance data, the application of eco-enzyme on oyster mushroom cultivation showed a highly significant effect on the number of pinheads in the first harvest. In addition, the application of eco-enzyme also had a significant effect on the number of pinheads in the second harvest, the fresh weight of the first harvest, the cap diameter of the first harvest, and the number of fruiting bodies in the first harvest.

Keywords: Sawdust, nutrition, and mycelium.