Bacterial Growth Bacillus sp. on Rice Bran Alternative Media and Antagonist Test with Fusarium sp.

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ABSTRACT

Soil-borne diseases are diseases that can reduce production, especially legumes and tubers, so it is necessary to control them, especially with biological agents, one of which is the use of bacteria from the genus Bacillus sp. The aim of this study was to create an alternative growth medium for Bacillus sp bacteria and to test the ability of Bacillus sp against Fungus Fusarium sp as a biological agent. This research was carried out for 3 months from September 2022 – November 2022. This research was conducted using isolates from previous exploratory research and carried out at the Bioscience Laboratory, Jember State Polytechnic. This study used 1 control media and 3 treatments in the form of different concentrations in each treatment such as 10 gr, 20 gr, and 30 gr bran. The data obtained was analyzed quantitatively by counting the number of colonies using the TPC (Total Plate Count) method, followed by the calculation of a non-factorial Completely Randomized Design (CRD) tested further using the Dunnet test at 1% level, and calculations using the inhibition test formula and qualitative description with adjust references to multiple references. The results showed that 30 gr rice bran media was better than selective media in the form of Yeast Peptone D-Glucose Agar characterized by the number of colonies of 3.60E+05 CFU/ml on rice bran media with a concentration of 30 gr and 2.00E+05 CFU/ml on selective media on the 4th day. Qualitative data were obtained from observing the size of the bacterial colonies in each inoculation medium and the inhibition test. To test the inhibition power, it was inoculated on TSA media and got results with the presence of inhibition in the form of a clear zone where the clear zone provided information that the bacteria Bacillus sp. is an effective bacterium to be used as a biological agent.

Keywords : Bacillus sp., Alternative Media, Inhibitory Power, Fusarium sp.