

ABSTRACT

**IDENTIFICATION *Aspergillus spp.*
AND EFFICACY OF COCONUT SHELL LIQUID SMOKE
AGAINST ITS PATHOGENICITY ON CORN**

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Aflatoxin is one of the mycotoxins that you should be wary of because *Aspergillus spp.* as a source, it has a big chance of poisoning rice, corn, soybeans and peanuts which are food ingredients. Efforts to control the fungus *Aspergillus spp.*, need to use natural ingredients that are environmentally friendly and safe for consumption. Liquid smoke has various benefits and has been applied to the food industry, plantation industry and wood industry. The use of liquid smoke in food is used as a preservative which has antifungus properties. This research used an experimental method with a completely randomized design consisting of 6 treatments and 4 replications. The treatments applied were liquid smoke concentrations *in vitro* (0%, 0.2%, 0.4%, 0.6%, 0.8% and 1%); and *in vivo* (0%, 20%, 40%, 60%, 80% and 100%). Observations of the diameter and inhibition of fungal growth were carried out for 7 days after inoculation and measurements of the diameter, inhibition of fungus and intensity of invasion by *Aspergillus spp.* carried out 10 days after inoculation with an interval of 2 days. The identification results on corn cobs in the field found the presence of *Aspergillus spp.* based on macroscopic and microscopic tests. Efficacy test of liquid smoke against *Aspergillus spp.* in the *in vitro* culture test with a concentration of 1% was able to suppress the growth of the fungus *Aspergillus spp.* There was a correlation that, the higher the concentration of liquid smoke treatment, the greater the effect in suppressing the diameter of the lesion and increasing the inhibitory power of the growth of the pathogenic fungus. The highest effect was obtained with 1% liquid smoke treatment, which provided a lesion diameter of 0.04 mm and an inhibitory power of 99%. Meanwhile, in the *in vivo* test, soaking corn cobs in 100% liquid smoke was able to protect them from the growth of *Aspergillus spp.* lesions.

Key words: *Aspergillus spp.*, coconut shell liquid smoke, and corn