

TECHNICAL NOTE

PHARMACEUTICAL AND IMMUNOMODULATION EFFECT OF YEAST AND MYCOTIC EXTRACTS AS FEED ADDITIVES FOR LIVESTOCK AND POULTRY

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The present article highlights the pharmaceutical and physiological effect of purified β -glucan from an edible mushroom (*Pleurotus florida*) as an immunomodulator on the innate immune responses in broiler. Also, mushroom glucan as a feed supplement significantly provides protection against disease. This article portrays the potentiality of β -glucan (mushroom origin) as an immunostimulant in poultry.

Key words: Fungus, Chicken, Immunomodulator, Yeast.

INTRODUCTION

Immunomodulator stimulates leucocytes, particularly cells of the macrophage system and modulates and potentiates the immune system of the body (Wadstrom, 1990). It has been recommended earlier that the constant addition of immunomodulators to feed is beneficial for prevention of diseases (Onarheim, 1992). One of such immunostimulant compound is β -Glucan, polymers of glucose which consists of a linear backbone of β -1, 3 linked D-glucopyranosyl residues having varying degree of branching from the C₆ position (Bohn and BeMiller, 1995). β -Glucans are major structural components of yeast, mushrooms and fungal mycelia.

Supplementation of β -glucan in diets increase the macrophage phagocytic activity, PHA-P-mediated lymphoproliferative response and also humoral response (Guo *et al* 2003). β -Glucan provides significant protection against pathogen as a feed additive by upregulating phagocytosis, bacterial killing, and oxidative burst in chicken (Lowry *et al* 2005).

In the mammalian system, action of β -glucan is mediated through toll-like receptors (TLR) and

dectin-1 (Lowry *et al* 2005). In the present work, evaluation was carried out for short term dietary influence of a purified β -glucan, prepared from an edible mushroom, on innate immunity and disease resistance of broiler birds (**Figure 1**).



Fig. 1. Image of *Pleurotus florida*

Immunomodulator is a substance that stimulates leucocytes-particularly cells of the monocyte/