

ORGANOMUNE PLUS DRY

ORGANOMUNE PLUS PLUS PLUS IS AN EXCELLENT SOURCE OF MANNANOLIGOSACCHARIDES & ALFA & BETA-GLUCANS

Beta-glucan is a fiber-type polysaccharide (sugar compound) that comes from the cellular wall of a specially selected yeast named *Saccharomyces cerevisiae*. Research indicates that beta-glucan is very effective at activating white blood cells known as macrophages and neutrophils, both of which provide the immune system's first lines of defense against foreign material in the body. A beta-glucan-activated macrophage or neutrophil can recognize and kill tumor cells, remove cellular debris resulting from oxidative damage, speed up recovery of damaged tissue, and further activate other components of the immune system.

Evidence of benefits in animals

The presence of a particulate activator can rapidly initiate assembly and amplification of a host defense system involving humoral and cellular interactions with B-glucans. ...Animals pretreated with purified glucan particles are subsequently more resistant to bacterial, viral, fungal, and protozoan challenge, reject antigenically incompatible grafts more rapidly and produce higher titers of serum antibodies to specific antigens.

Administration of glucan particles ...stimulates... proliferation of macrophages and increases in phagocytic and secretory activities of macrophages. ...A cascade of interactions and reactions initiated by macrophage regulatory factors can be envisioned to occur and to eventuate in conversion of the glucan-treated host to an arsenal of defense.*

**An Arsenal of Immune Defense: Czop, Joyce K., "The Role of Beta.-Glucan Receptors on Blood and Tissue Leukocytes in Phagocytosis and Metabolic Activation". Pathology and Immunopathology Research; 5:286-296. Harvard Medical School. 1986.*

Product Specifications

ANIMAL FEEDS

Birds, cattle, rabbits, horses pets and sheep.

EFFICACY

Effective for the enhancement of the immune system.

DOSE Use at the rate of 500 grams to Two (1) kilograms per ton of feed.

STORAGE

Store in a cool, dry, ventilated area. Keep away from exposure to direct sunlight.

PRECAUTIONS

Avoid contact with skin and eyes.

EXPIRATION: Two (2) years in original packing. Close tightly after use.

PACKAGING: 25 Kg. multi-wall P.E. lined heat sealed paper bags.

Excusive Distributor in your area:



Organic Chemical Solutions, LLC

Organic Natural Safe Chemical Solutions for Livestock

Organomune Plus Powder

Advanced Immune Enhancing Technology

A powerful combination of 1:3, 1:6 betaglucan and Mannanligo Saccharides

Also available in liquid form as *Organomune Plus Liquid*.



Organic Chemical Solutions, LLC
250 John Morrow Parkway Suite 121/140, Gainesville, Georgia 30501
email us at info@ocslc.net; visit us at www.ocslc.net
Organic Natural Safe Chemical Solutions for Livestock

Advantages of Organomune Plus

Glucan enhances the immune response through stimulation of macrophages by increasing their number, size, and function, stimulates secretion of lysozyme and TNF by activated macrophages, increases the phagocytosis of antigens, activates the formation of granulocyte and monocyte colonies, and factors increased activity of T and B lymphocytes, as well as complement activation.

Immune Response Enhancement: Meira, D.A., et al; The Use of Glucan as Immunostimulant in the Treatment of Paracoccidioidomycosis; Am J Trop Med Hyg 55(5), 496-503; 1996. Dept of Trop Dis, Dept of Microbiology.

The presence of a particulate activator can rapidly initiate assembly and amplification of a host defense system involving humoral and cellular interactions with B-glucans. Animals pre-treated with purified glucan particles are subsequently more resistant to bacterial, viral, fungal, and protozoan challenge, reject antigenically incompatible grafts more rapidly and produce higher titers of serum antibodies to specific antigens.

An Arsenal of Immune Defense: Czop, Joyce K., "The Role of Beta-Glucan Receptors on Blood and Tissue Leukocytes in Phagocytosis and Metabolic Activation". Pathology and Immunopathology Research; 5:286-296. Harvard Medical School. 1986.

Possible comparative total and strong binding percentages of certain mycotoxins by the addition of a Organomune Plus and other binding agents.

TYPE OF MYCOTOXIN TESTED	Aflatoxin		Zearalenone		Fumonisin		Deoxynivalenol	
	Total and strong binding capacity (%)							
	Total	Strong	Total	Strong	Total	Strong	Total	Strong
Aluminosilicate	92.4	86	33.6	11	11	11.8	20.1	12
Diatomaceous earth	98	47	64.1	12	17.7	17		
Organomune Plus Plus Plus	100	98	80	60	60	50	13	11

Why do I need to include Organomune Plus with the feed?

Inclusion of MOS in feed at 4 g/kg decreased the prevalence of colonization with Salmonella dublin in three consecutive trials from 89.8% to 55.7%. This difference was statistically significant (P<0.05). The concentration of Salmonella typhimurium strain 29 E was significantly reduced in three consecutive trials from 5.40 to 4.01 log CFU/g cecal contents. The concentrations of coliforms, lactobacilli and anaerobes were unaffected by inclusion of MOS in diets. The inhibition of Salmonella colonization was not associated with any change in cecal pH or elevation in propionic acid concentration suggesting a specific interaction between MOS and Salmonella. A similar reduction in the concentration of S. typhimurium from 6.28 to 4.13 log CFU/g of cecal contents was demonstrated by Belamaranahally (2000) applying standard procedures for incubation of eggs.

Modes of action

Phosphorylated mannan oligosaccharides have at least three distinct modes of action by which broiler performance is improved: adsorption of pathogenic bacteria containing Type 1 fimbriae, sometimes referred to as the "receptor analogue" mechanism (strongly binding to and decoying pathogens away from the "sugar coated" intestinal lining), or stated another way, different bacterial strains can agglutinate mannan oligosaccharides; improved intestinal function or "gut health" (for example: increases villi height, uniformity, and integrity) and immune modulation simulates gut associated and systemic immunity by acting as a non-pathogenic microbial antigen, giving an adjuvant-like effect.

A study was conducted to evaluate lignin and mannan oligosaccharides as potential alternatives to antibiotic growth promoters in broilers. Dietary treatments included an antibiotic-free diet (CTL-), a positive control (CTL+, 11 mg/kg of virginiamycin), and an antibiotic-free diet containing Mos (MOS, 0.2% to 21 d and 0.1% thereafter) or lignin at 1.25% (LL) or 2.5% (HL) of the diet.

Each treatment was randomly assigned to 4 floor pen replicates (40 birds each). Body weight and feed conversion were recorded weekly throughout 42 d. Jejunum histology was analyzed at d 14, 28, and 42. At d 28 and 42, cecal contents were assayed for Escherichia coli, Salmonella, lactobacilli, and bifidobacteria, and the litter was analyzed for E. coli and Salmonella. Birds fed the CTL- diet were heavier (P<0.05) than those fed the other dietary treatments, but feed conversion was not affected by dietary treatments. Birds fed MOS and LL had increased jejunum villi height and a higher number of goblet cells per villus (P<0.05) when compared with those fed the CTL+ diet.

At d 42, birds fed or HL had greater lactobacilli numbers than those fed the CTL+ diet. Compared with the CTL+ diet, the MOS diet increased the populations of bifidobacteria (P<0.05) in the ceca. Litter E. coli load was lower in birds fed MOS (P<0.05) than in birds fed the CTL+ diet but comparable to that of birds fed the LL or HL diet. Broiler performance was similar in birds fed antibiotics or antibiotic-free diets containing either MOS or lignin. However, birds fed MOS and LL had a comparative advantage over birds fed antibiotics as evidenced by an increased population of beneficial bacteria in the ceca, increased villi height and number of goblet cells in the jejunum, and lower population of E. coli in the litter.*



*Poult Sci. 2007 Jun;86(6):1070-8. Effects of purified lignin and mannan oligosaccharides on intestinal integrity and microbial populations in the ceca and litter of broiler chickens. Baurhoo B, Phillip L, Ruiz-Feria