

Advanta MOS™

MOS = Mannan Oligosaccharides

Science & Nature in Balance

ADVANTA MOS™ is a prebiotic produced from a Mannan Oligosaccharides and Beta-glucan complex which has been extracted from the cell wall of molasses yeast (*Saccharomyces cerevisiae*). The soluble portions of the yeast cells are removed by a gentle digestion and the remaining insoluble cell wall fraction is then washed and spray dried.

BETA GLUCANS

The beta glucans are known for their capacity to bind to phagocytic cells that hence become more active in the immune system. At the same time, these activated cells produce a chemical known as cytokine, which cause a chain reaction producing more phagocytic cells, thus creating a stronger immune system. MOS action is based on interfering with pathogen receptor or their toxin-receptor. MOS can bind and neutralize toxins in the intestinal lumen or block the binding sites of pathogens to intestinal epithelium. The binding sites for beneficial bacteria are not affected by beta glucans.

ADVANTA MOS™ protects the defense system, blocking the colonization of pathogens.

ADVANTA MOS™ will agglutinate Salmonella and E. coli, as well as absorb mycotoxins produced by fungi.

ADVANTA MOS™ is an exclusive nutrition source for beneficial bacteria, such as Lactobacillus and Bifidobacteria.

ADVANTA MOS™ has an important effect as it is absorbent of mycotoxins produced by fungi.

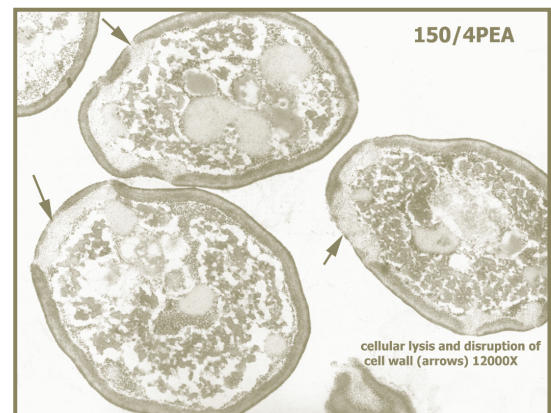


Image provided by Diane Nowicki and Ryan Liermann
www.yeastgenome.org/yeast_images.html

ADVANTA MOS™ stimulates the immune system and controls disease.

APPLICATION

Immune stimulation: the therapeutic effect of glucan has been primarily due to stimulation of the reticulo endothelial system (RES), which in turn produces increased amounts of macrophages that play a key role in the body's natural immune system. The precise function of the macrophages is to absorb and destroy the invading particles through phagocytosis. Recent studies have demonstrated the beneficial effect of glucan in improving host resistance by enhancing both humoral and cellular immunity to certain malignant tumors as well as to certain bacterial and viral infections. (DiLUZIO, 1985; REED and NAGODAWITHANA, 1991)

DISEASE CONTROL

Glucans are one of the most important structural elements of cell walls (ROSENBERGER, 1976), and are known to stimulate defense mechanisms in a range of higher organisms. The studies have demonstrated the therapeutic value of phosphorylated glucans in combating a variety of diseases caused by bacteria, fungi, viruses, and also in attempting



ADVANCED PRODUCTS

Advanta MOS™

MOS = Mannan Oligosaccharides

Science & Nature in Balance

to change the course of certain neoplastic conditions (RAA et al., 1992). Saccharomyces cerevisiae cell wall is also an important source of MOS, “Mannan Oligosaccharides”, that acts in the gut of animals capturing hostile gut-wall-attacking bacteria like E. coli (MOS locks into hostile bacteria molecular structure and carries them safely outside).

CERTIFIED Available upon request.

COWS 10 grams per head, per day.

PACKAGING 25-Kg multi-walled paper bags with poly liner.

ADVANTA MOS™ is an insoluble Mannan Oligosaccharides and Beta-glucan complex which has been extracted from the cell wall of molasses yeast (Saccharomyces cerevisiae). The soluble portions of yeast cells are removed by gentle digestion; the remaining insoluble cell wall fraction is then washed and spray dried.

INDICATIONS FOR USE

For manufacturing of feed premixes for chickens, turkeys, swine, dairy cattle and beef cattle.

INGREDIENTS

Spray Dried Yeast Cell Wall (Saccharomyces cerevisiae)

GUARANTEED ANALYSIS

Glucomannans. Min. 33.0%
Crude Protein (CP) Min. 30.0%
Moisture Min. 4.0%

MIXING INSTRUCTIONS

SWINE

Piglets 2.0 kg/ton
Pigs & Sow 1.0 kg/ton

CATTLE

Calves 2.0 - 2.5 kg/ton
Dairy & Beef Cattle 1.0 - 2.0 kg/ton

POULTRY

Broilers 1.0 kg/ton
Layers 1.0 kg/ton

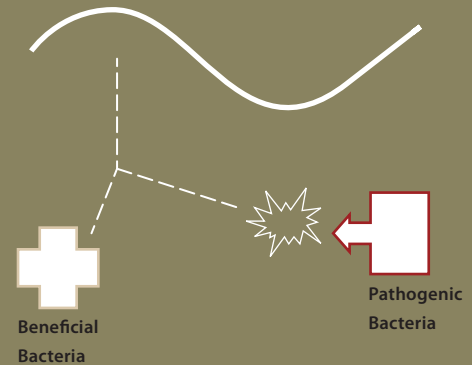
PETS

Dogs 0.5 kg/ton
Cats 0.5 kg/ton

CAUTION: Care should be used in storing and handling this product.

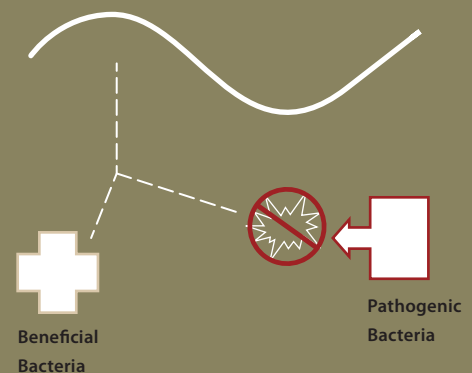
1. Store in a clean, dry place.
2. Do not breathe ADVANTA MOS™ dust or expose to unprotected skin.
3. Take precautions not to cross contaminate supplemented feeds.

INTESTINAL COLONIZATION



- Beneficial bacteria and pathogenic bacteria have different binding sites
- Infection begins when pathogens bind to the intestinal walls

INTESTINAL COLONIZATION WITH MOS SUPPLEMENTATION



- Mannan Oligosaccharides block the binding site of pathogenic bacteria so the body is not affected, nor is the binding site for the beneficial bacteria.

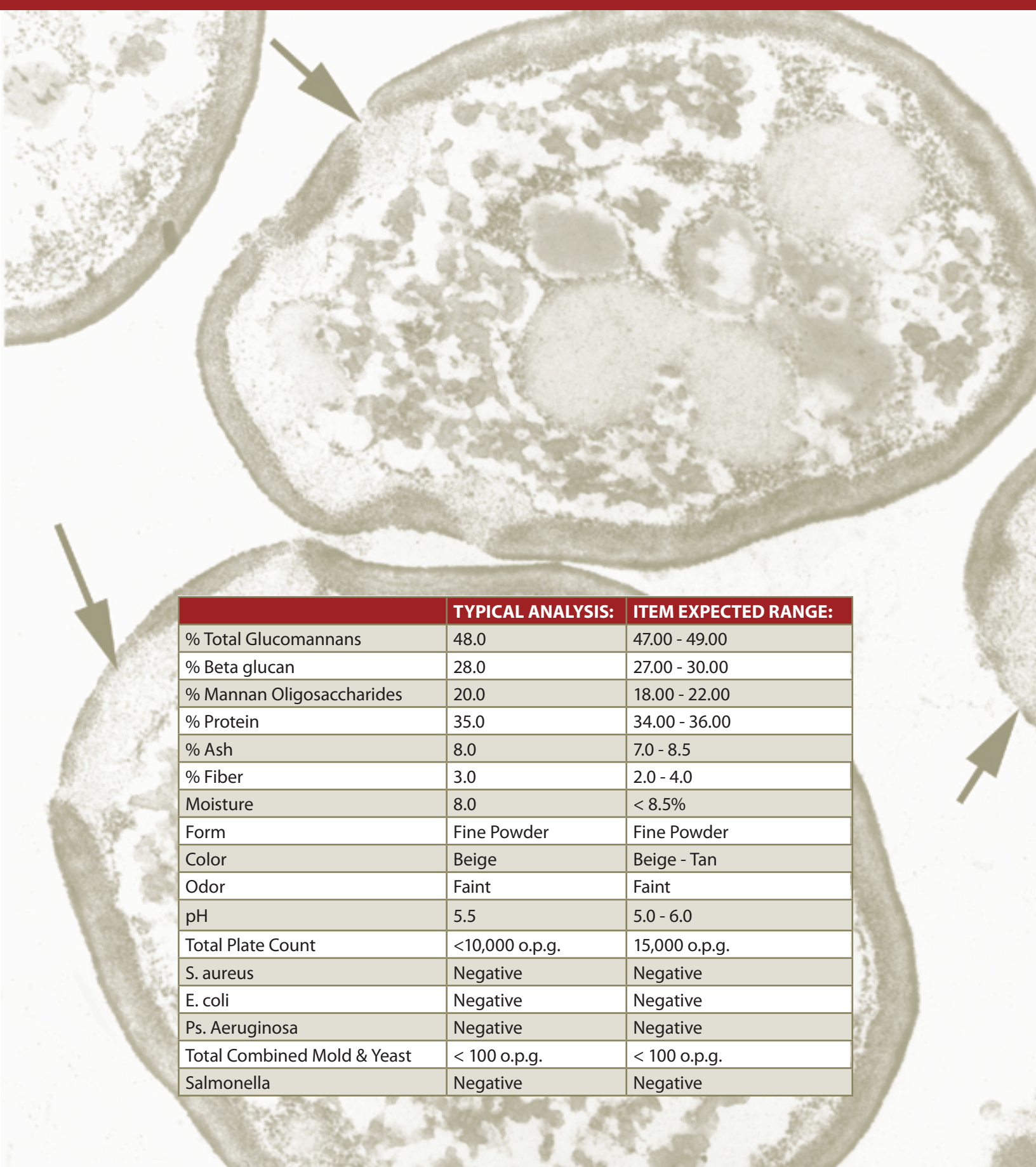


ADVANCED PRODUCTS

Advanta MOS™

MOS = Mannan Oligosaccharides

Science & Nature in Balance



	TYPICAL ANALYSIS:	ITEM EXPECTED RANGE:
% Total Glucomannans	48.0	47.00 - 49.00
% Beta glucan	28.0	27.00 - 30.00
% Mannan Oligosaccharides	20.0	18.00 - 22.00
% Protein	35.0	34.00 - 36.00
% Ash	8.0	7.0 - 8.5
% Fiber	3.0	2.0 - 4.0
Moisture	8.0	< 8.5%
Form	Fine Powder	Fine Powder
Color	Beige	Beige - Tan
Odor	Faint	Faint
pH	5.5	5.0 - 6.0
Total Plate Count	<10,000 o.p.g.	15,000 o.p.g.
S. aureus	Negative	Negative
E. coli	Negative	Negative
Ps. Aeruginosa	Negative	Negative
Total Combined Mold & Yeast	< 100 o.p.g.	< 100 o.p.g.
Salmonella	Negative	Negative

N	SPECIES	AGGLUTINATION
1	Salmonella agona	++
2	Salmonella enteritidis	++
3	Salmonella anatum	+
4	Salmonella derby	++
5	Salmonella schwarzengrund	+
6	Salmonella rissen	+
7	Salmonella worthinton	+
8	Salmonella pullorum	-
9	Salmonella DERBY	++
10	Salmonella heidelberg	++
11	Salmonella worthinton	+
12	Salmonella rissen	++
13	Salmonella seftemberg	+
14	Salmonella agona	+
15	Salmonella livingstone	++
16	Salmonella enteritidis	++
17	Salmonella cerro	++
18	Salmonella livingstone	+
19	Salmonella orion	-
20	Salmonella enteritidis	+
21	Salmonella enteritidis	++
22	Salmonella schwarzengrund	+
23	Salmonella rissen	+
24	Salmonella anatum	++
25	Salmonella seftemberg	+
26	Salmonella ohio	+
27	Salmonella anatum	+
28	Salmonella seftemberg	+
29	Salmonella mbandaka	+
30	Salmonella worthinton	++
31	Salmonella infantis	+
32	Salmonella agona	+
33	Salmonella gallinarum	+
34	Salmonella seftemberg	+
35	Salmonella seftemberg	+
36	Salmonella enteritidis	++
37	Salmonella enteritidis	+
38	Salmonella enteritidis	++
39	Salmonella enterica	+
40	Salmonella enteritidis	++
41	Salmonella enteritidis	+
42	Salmonella enteritidis	+
43	Salmonella enteritidis	++
44	Salmonella typhimurium (1)	+
45	Salmonella typhimurium (2)	+
46	Salmonella typhimurium (3)	+
47	Salmonella typhimurium (4)	++

N	SPECIES	AGGLUTINATION
48	Salmonella typhimurium (5)	+
49	Salmonella seftemberg	+
50	Salmonella agona	+
51	Salmonella emek	+
52	Salmonella hadar	+
53	Salmonella tennessee	-
54	Salmonella schwarzengrund	+
55	Salmonella saint-paul	-
56	Salmonella derby	+
57	Salmonella typhimurium	+
58	Salmonella montevideo	-
59	Salmonella anatum	+
60	Salmonella cubana	+

N	SPECIES	AGGLUINATION
1	Escherichia coli M4-4251	-
2	Escherichia coli F18-LT	+
3	Escherichia coli M4-4249	++
4	Escherichia coli M5-10341	+
5	Escherichia coli M4-7387	+
6	Escherichia coli M5-7384	-
7	Escherichia coli M4-8356	-
8	Escherichia coli 5511	+
9	Escherichia coli M5-2338	+
10	Escherichia coli M5-4246	++
11	Escherichia coli M5-10494	+
12	Escherichia coli M4-6743	+
13	Escherichia coli M4-4648	+
14	Escherichia coli M4-4247	+
15	Escherichia coli M4-7389	+
16	Escherichia coli M4-8358	-
17	Escherichia coli F18 Vtc	+
18	Escherichia coli M4-4246	+
19	Escherichia coli M4-8355	-
20	Escherichia coli G-1253	+

MOS is effective in 93.4% of Salmonella species tested.
MOS is effective in 95% of E. coli species tested.

University of Sao Paulo
Dr. Sydney Hartz Alves & Janio M. Santurio
Initial Date: Feb 2007 Finish date: April 2007



enzabac.com
enzabac@enzabac.com
(877) 736-1607