ANIMAX FEED SUPPLEMENT DAIRY CATTLE

MANASEER
Industrial Complex

MANASEER Cement Industry | MANASEER Carbonate | MICSMART™ | Power Plant | MICSHIELD™

Ultra Natural Minerals | ANIMAX Natural Minerals | MIC AQuaculture Form supplements

MIC ANIMAX
Natural Minerals

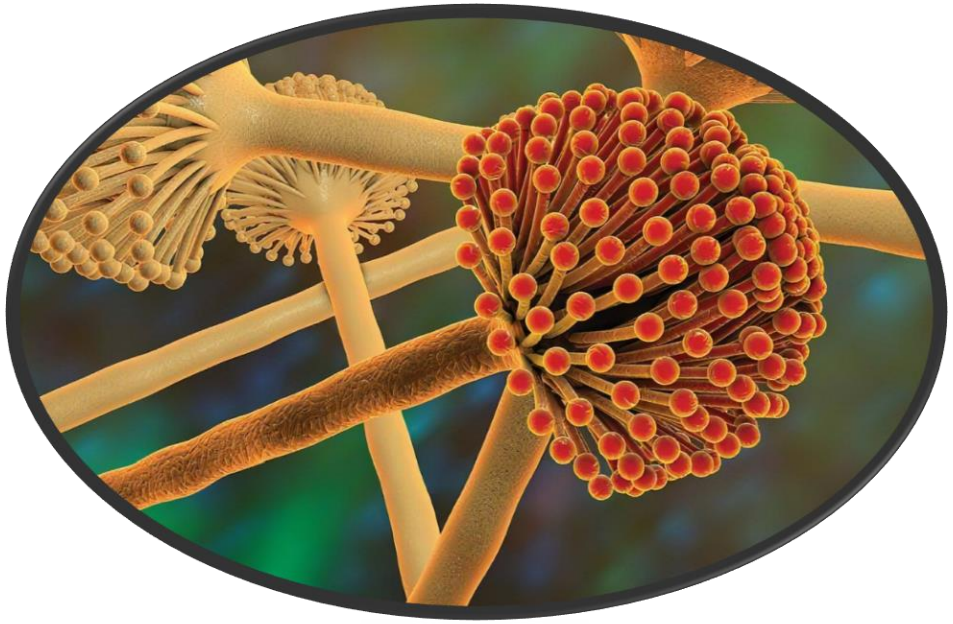
MANASEER
Industrial Complex

Introduction

Feed used for dairy concentrate is mainly based on corn and SBM

Fungi grows in many types of feed and several mycotoxins are produced from it

- Aflatoxin
- Fumonisin
- Zearalenone
- Trichothecenes
- Ochratoxins



Mycotoxin producing fungus

MANASEER
Industrial Complex

Introduction

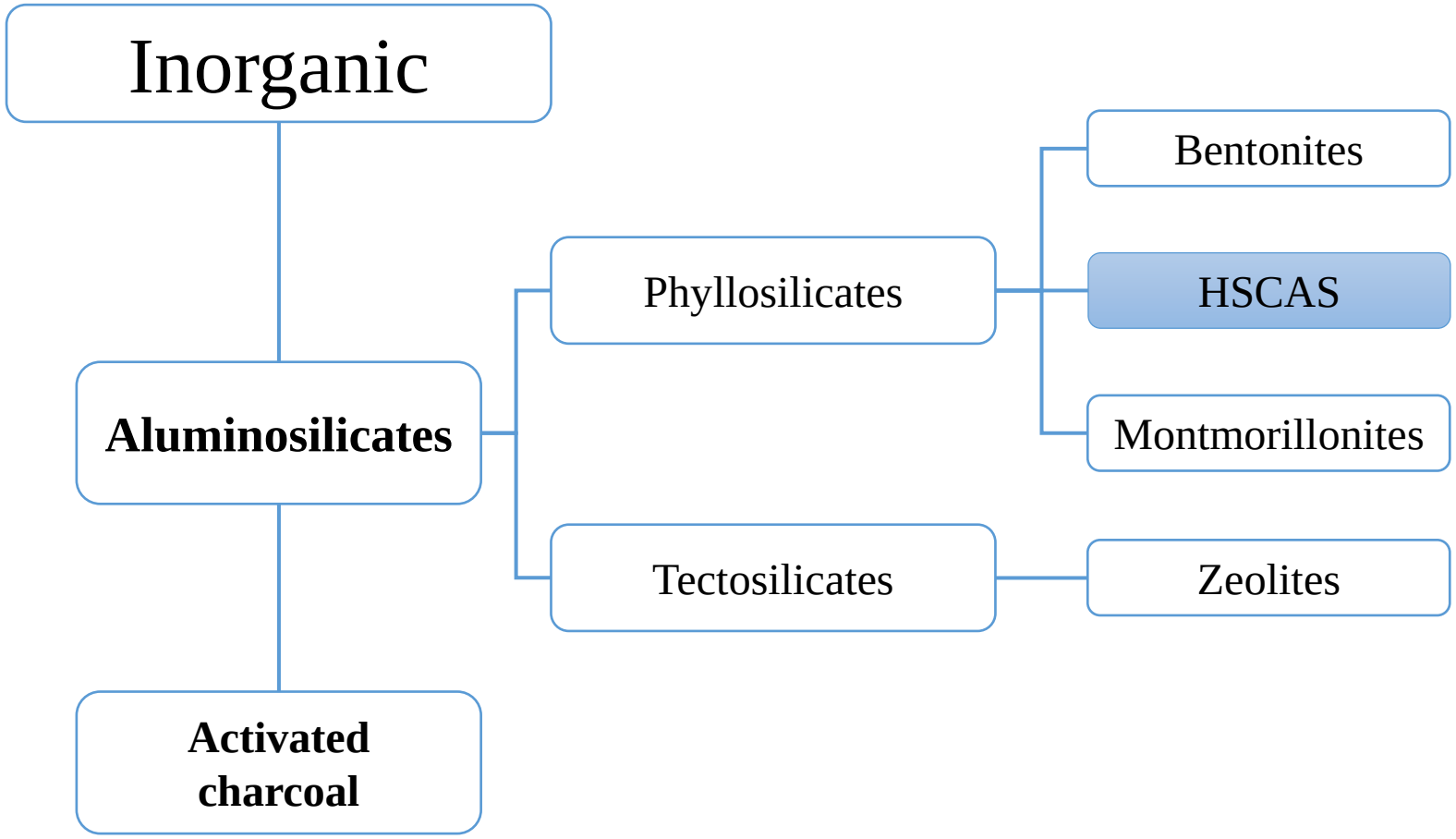
Mycotoxin in feed

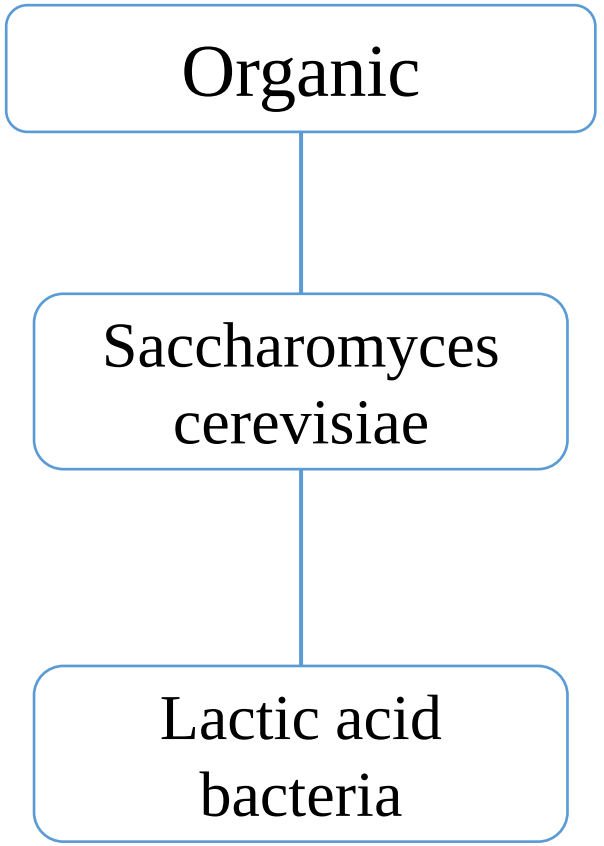
- Reduce feed intake and animal feed refusal will be noted
- Affect the GIT environment and function
- Effect on hepatic function and alteration the body metabolism
- Suppression of the immune system and reduce vaccination efficiency

To reduce these problems, mycotoxin binder must be used as feed supplement

MANASEER
Industrial Complex

Mycotoxin Binders





MANASEER
Industrial Complex

MIC ANIMAX
Natural Minerals

Feed additive contains hydrated sodium calcium aluminosilicate **(HSCAS)** with Trace Elements amount of some 45 different elements

Specific surface area
4.722 m^2/g

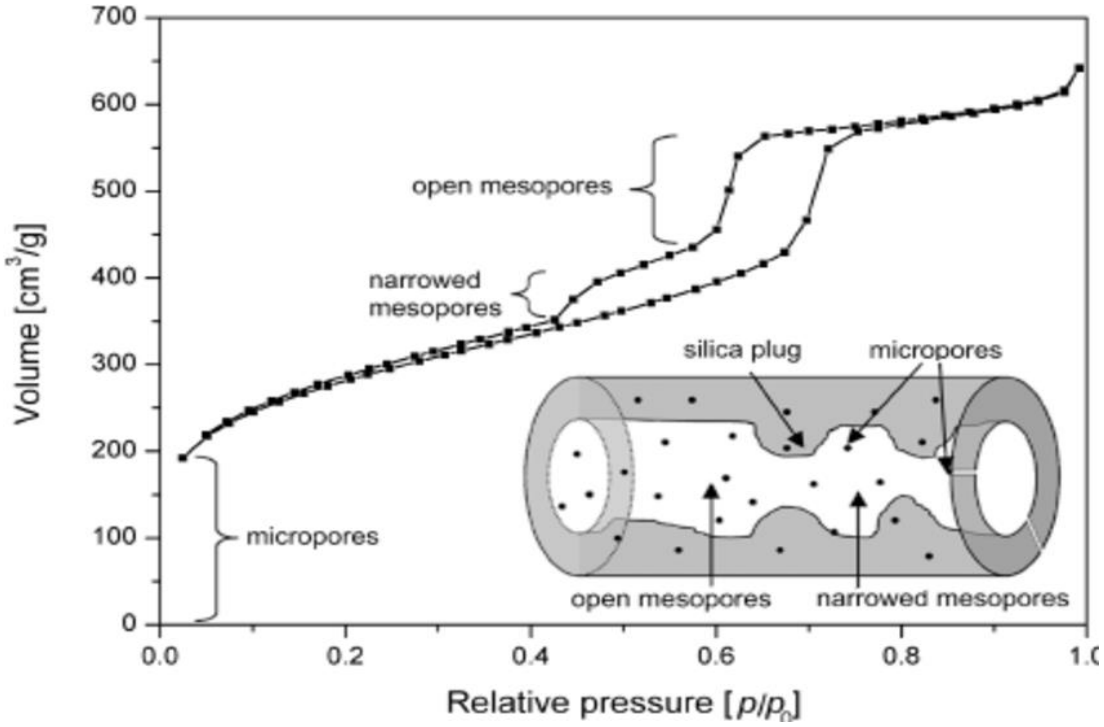
Specific surface area for micropore
0.851 m^2/g

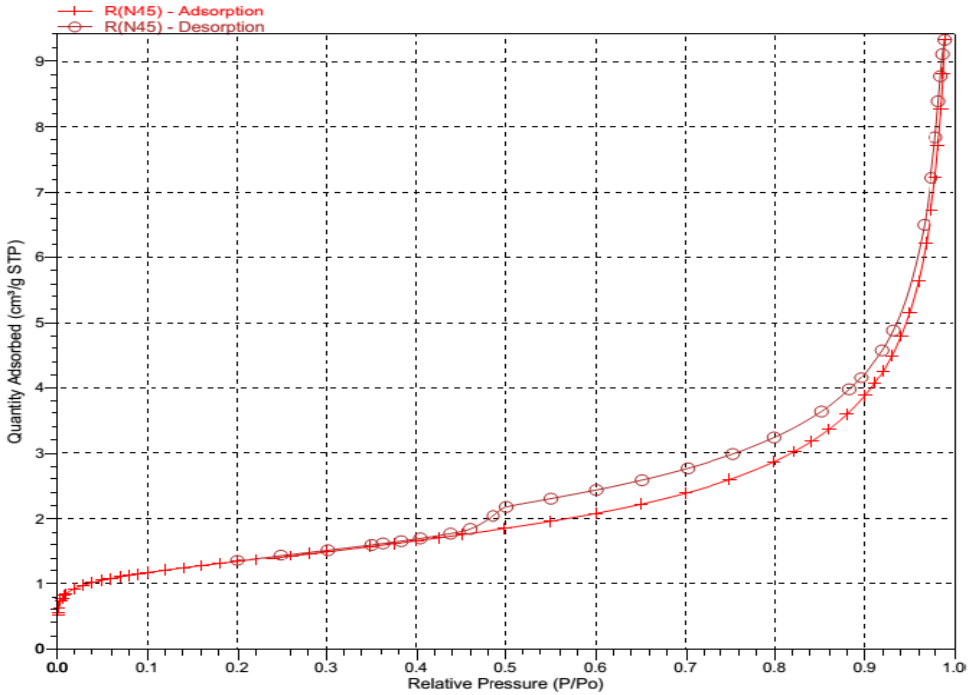
Specific volume of micropore
0.000377 cm^3/g

PARAMETER	SPECIFICATION
SiO_2	≤ 50.0 %
Al_2O_3	≤ 15.0 %
CaO	≤ 11.0 %
Fe_2O_3	≤ 10.5 %
MgO	≤ 8.5 %
Na_2O	≤ 4.0 %
K_2O	≤ 1.5 %
LOI	≤ 4.0 %
Moisture wt. %	≤ 0.22 %
PH Value	10-11
Particle Size	45 Micron

MANASEER
Industrial Complex

MIC ANIMAX
Natural Minerals





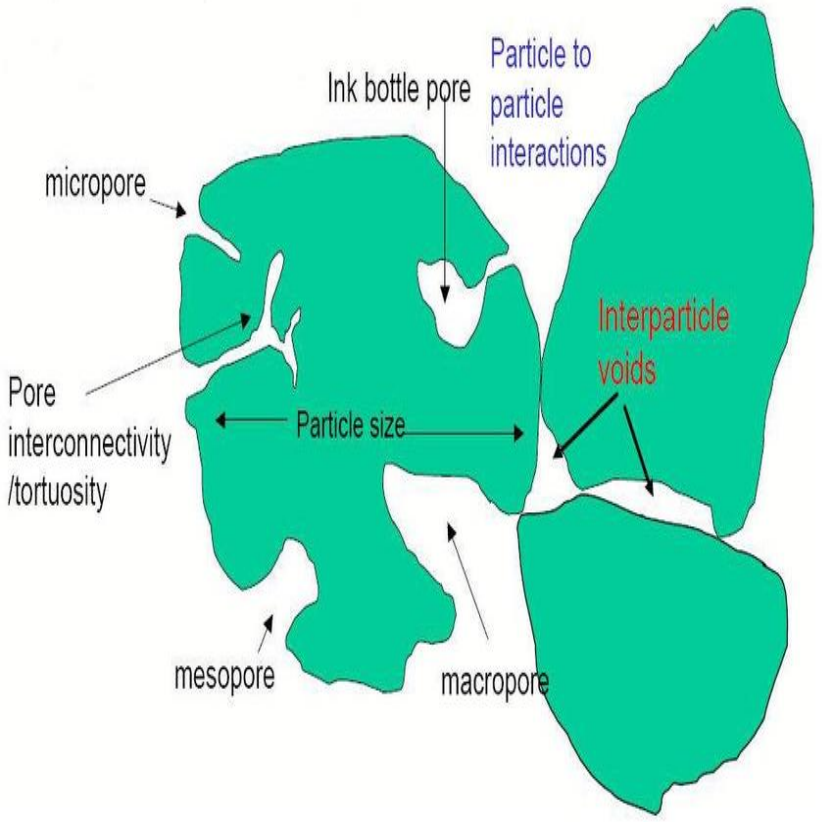
Animax Analysis

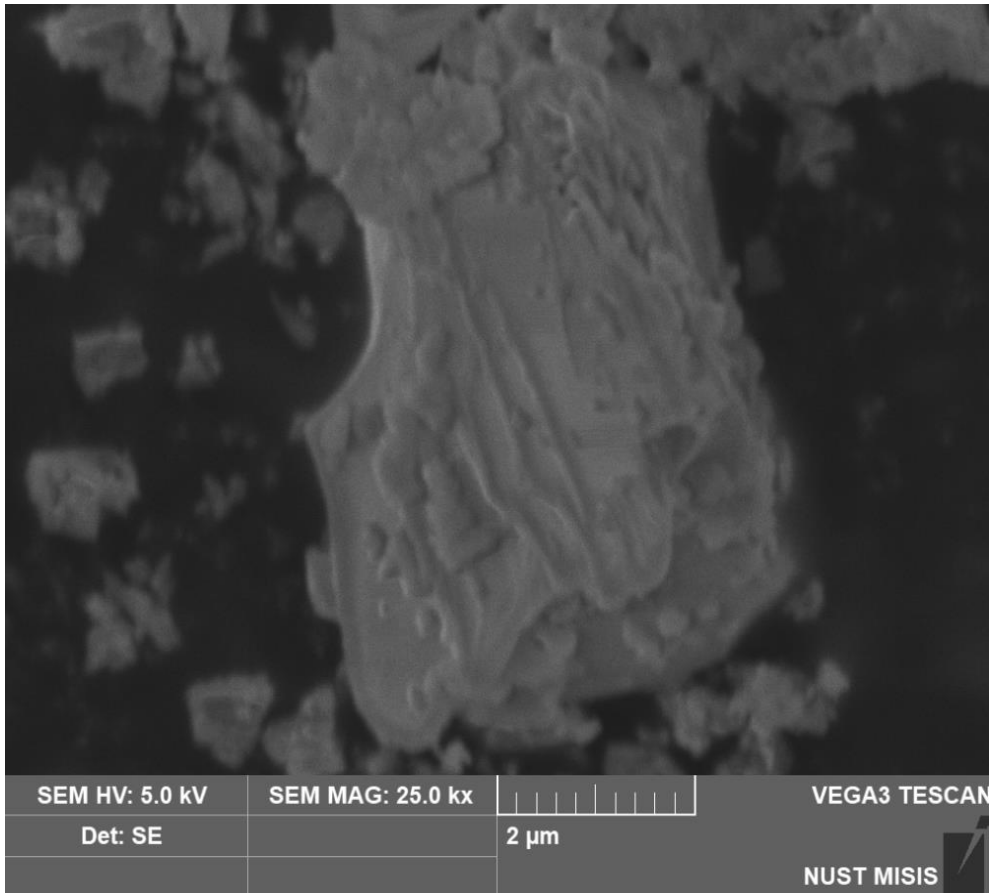
Animax is a IV in the classification of adsorption isotherm (attributed to monolayer-multilayer adsorption).

MANASEER
Industrial Complex

Animax shape

HSCAS is a phyllosilicates with a flake like interlayer structure

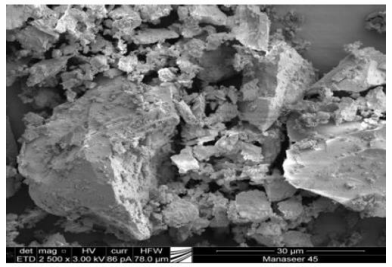




Classification of pore sizes: micropores (< 2 nm), mesopores (2~50 nm), macropores (> 50 nm

Animax Analysis

MANASEER
Industrial Complex

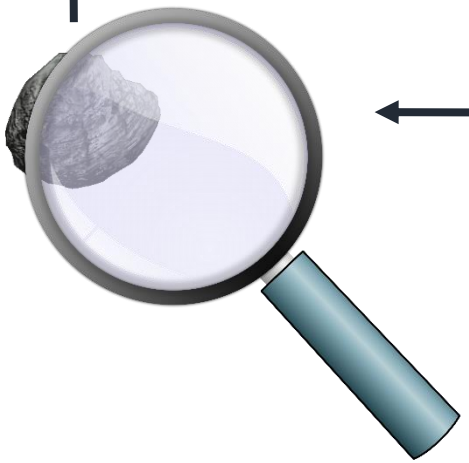


3- The final physical and chemical surface treatment is applied to achieve each individual group specific performance goals

1- Grinding to the specific particle size

2- Manaseer WI - Process is applied on each particle

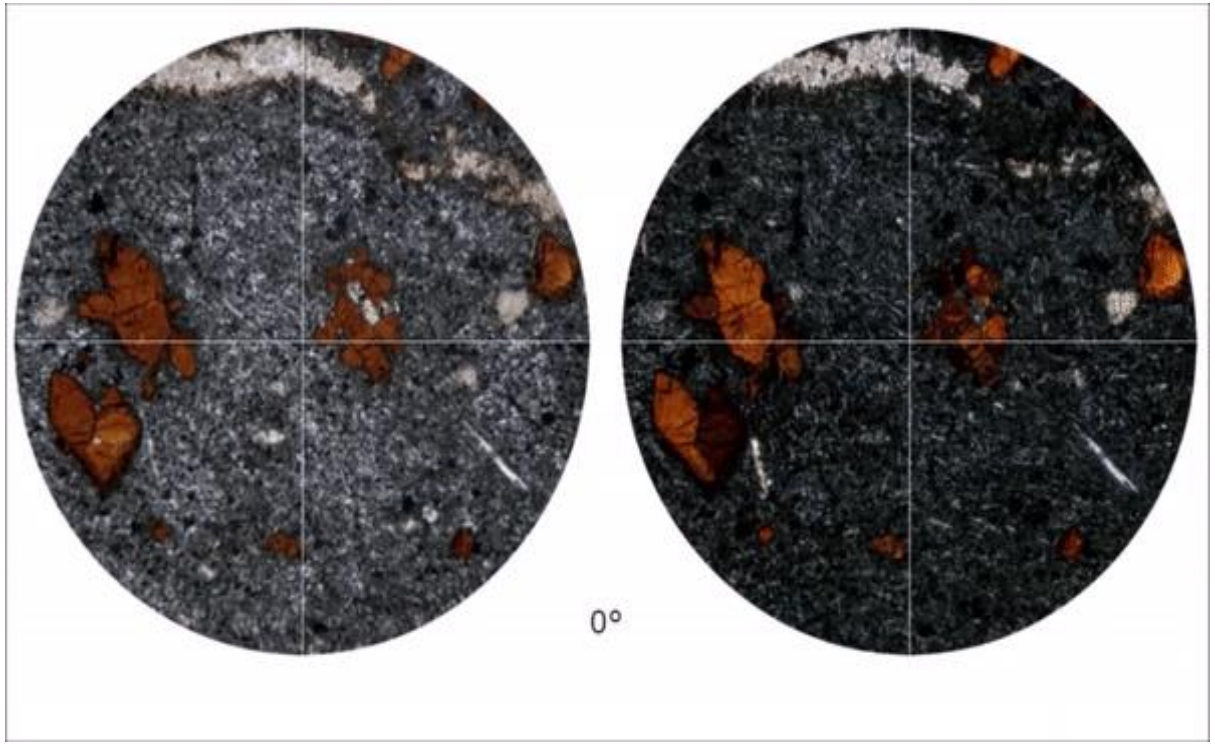
Simulating the natural alternation of Olivine to Iddingsite

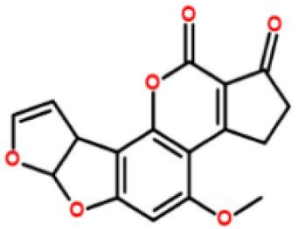


MANASEER
Industrial Complex

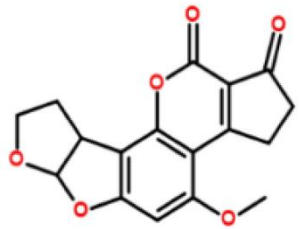
Adsorption

HSCAS reported to be very effective in binding AF

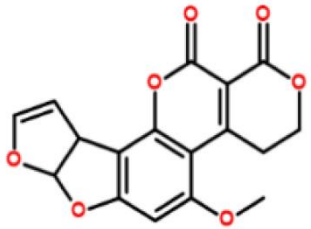




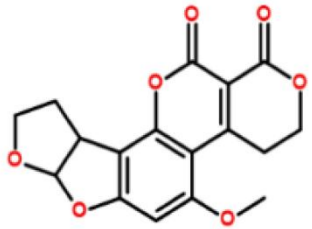
Aflatoxin B_1
(AFB_1)



Aflatoxin B_2
(AFB_2)



Aflatoxin G_1
(AFG_1)



Aflatoxin G_2
(AFG_2)

Aflatoxin is one of the mycotoxins that are produced by Aspergillus flavus

MANASEER
Industrial Complex

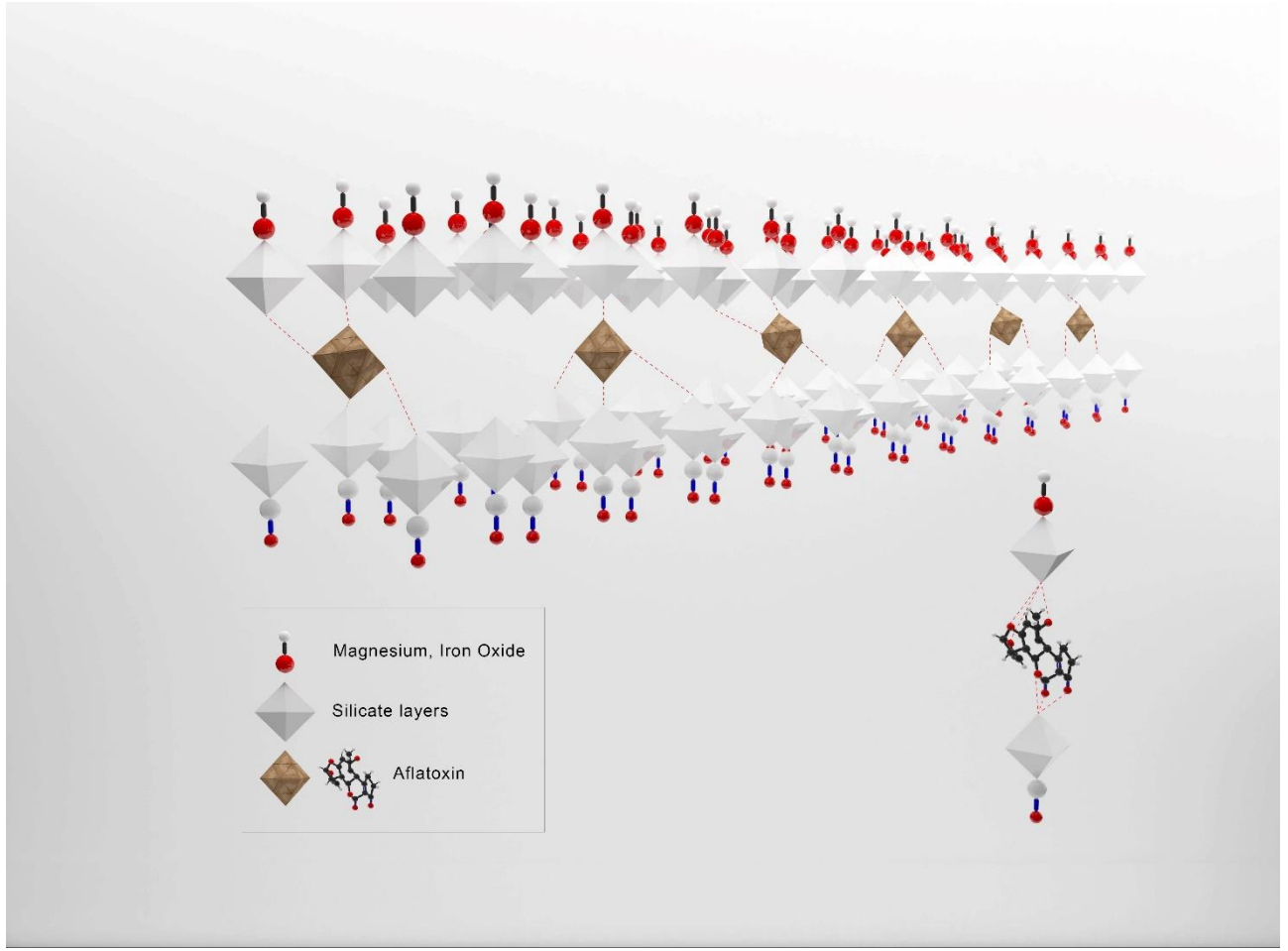
Animax Mode of Action

Mycotoxin binder

Adsorb the polar toxin and fix them between the clay layers.

Prevent toxins absorption in the intestine.

Remove the toxins naturally out of the body through faeces.



MANASEER
Industrial Complex

Animax Mode of Action

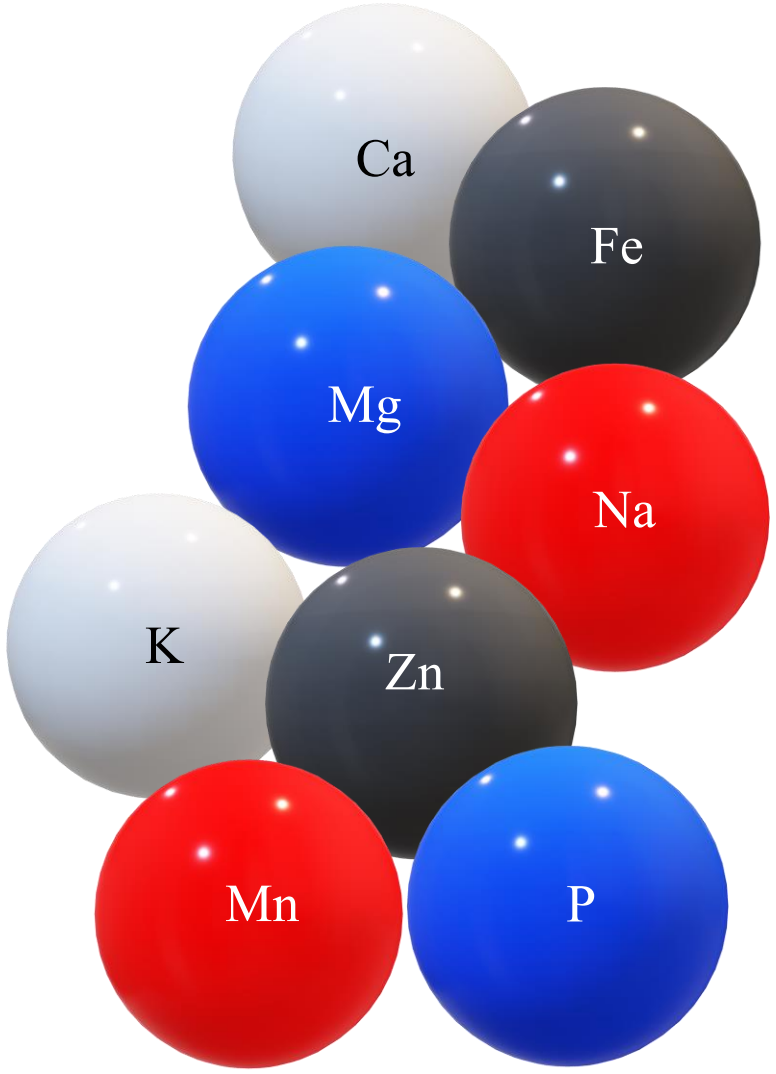
Elements Supplement

Contain many elements that helps in enhancing the metabolic rate of the animal.

Increase feed intake and improve the digestibility of DM, protein, and fat.

Promote good intestinal health and shape.

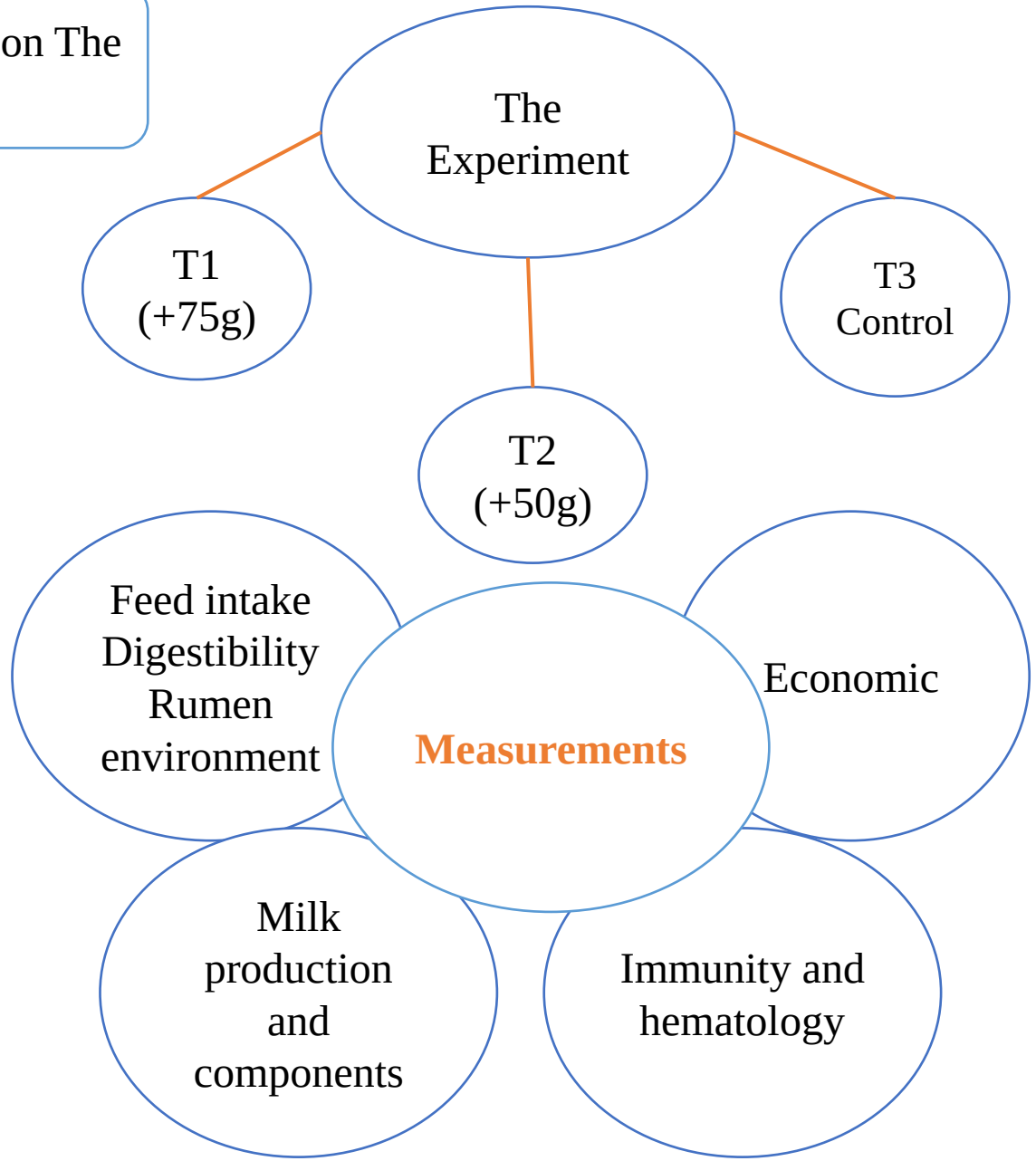
Enhancing the immunological function.



MANASEER
Industrial Complex

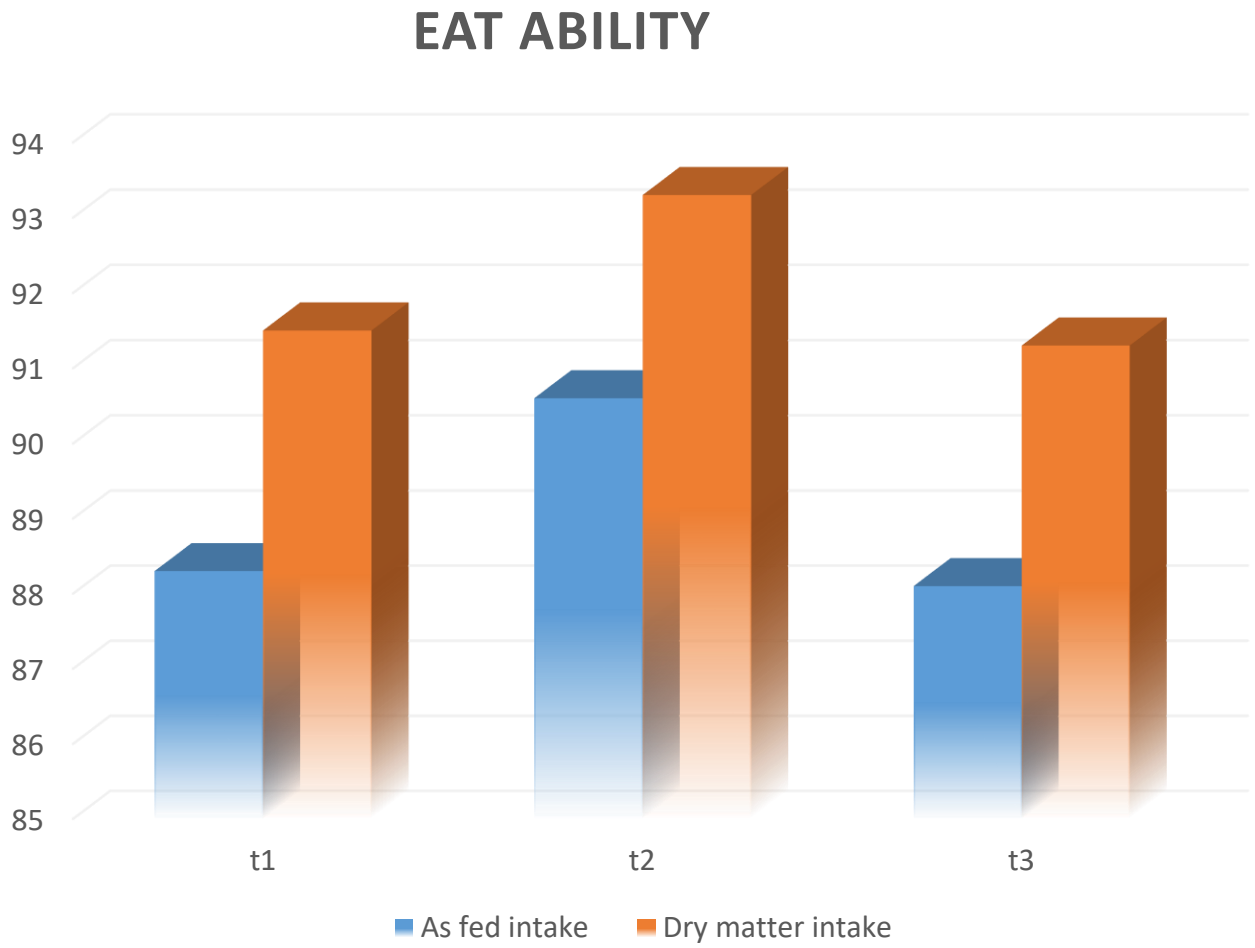
The Influence of The Mineral Feed Additive "Animax“ on The Milk Productivity of Cows

- The experiment was conducted at the **Nizhny Novgorod** State Agricultural Academy.
- Black and white dairy cattle with the same productivity.
- The experimental period lasted for 55 days.
- The ration that are fed has isocaloric isonitrogenous nutrients.
- 40% concentrate to 60% roughage



MANASEER
Industrial Complex

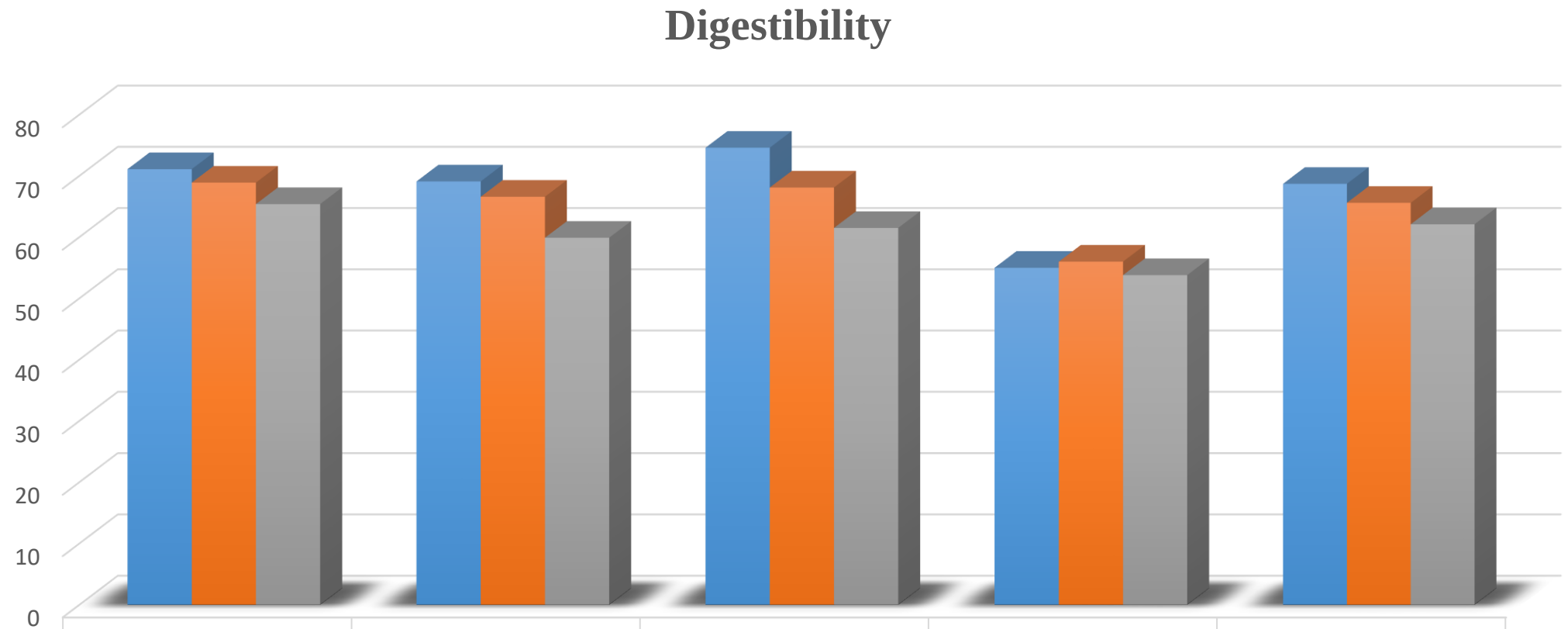
Effect of Animax on Eat ability



Eat ability (feed intake) = what's eaten/ all feed given

MANASEER
Industrial Complex

Effect of Animax on Digestibility



	Dry substance	Organic sub	protein	fat	cellulose
T1	71.1	69.1	74.6	55	68.7
T2	68.9	66.6	68.1	56	65.6
T3	65.4	59.9	61.5	53.8	62.1

T1 T2 T3

T1 significant in DM, OM, Protein digestibility
T2 was significant in fat digestibility

MANASEER
Industrial Complex

Content in Rumen Fluid, mg / kg

T	Ammonia mg/%	pH	Fatty Acids	Cellulolytic Activity %
1	20,6	5,82	10,05	2,04
2	**21,0**	**6,19**	10,83	2,98
3	19,8	6,07	10,87	3,51
Normal	10-40	6.0-7.3	6,0-14,0	2,0-4,0

Good ruminal fluid properties reflect the level of digestibility , health state of the cow

MANASEER
Industrial Complex

The Effect on Milk Yield, % of Milk Fat

T	At the beginning of experiment			At the end of experiment		
	Average Daily milk production	Fat %	Fat corrected milk	Average Daily milk production	Fat %	Fat corrected milk
1	25,03	4.1	30,18	25,0	4,08	30,0
2	**25,2**	**3,97**	**29,40**	**26,45**	**4,17**	**32,44**
3	25,1	4,06	29,97	24,2	4,18	29,75

MANASEER
Industrial Complex

Nnitrogen Calcium and Phosphorus Balances

Nutrient balance

Is the amount of nutrients that afforded by feed and utilized in the body.

N balance was enhanced significantly when MIC (Animax) supplemented in 50g/h/d.

Ca, and P amount in milk is higher in T2 although utilization for Ca, and P was grater for the control.

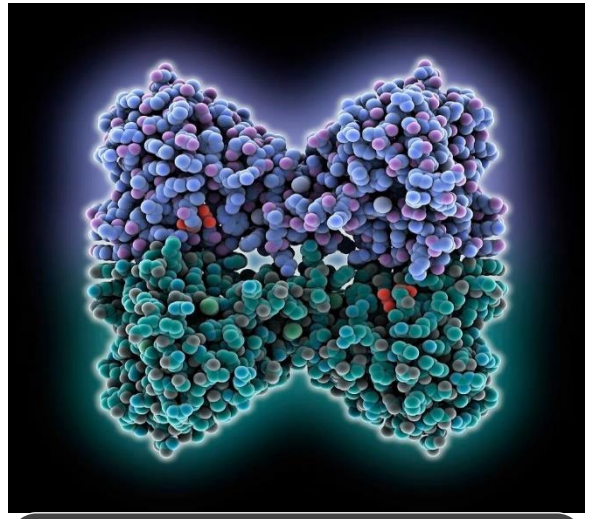
Indicator	Group		
	T1	T2	T3
Nitrogen taken/ g	**464,9 ± 8,05**	**487,5 ± 5,22**	**472,9 ± 3,33**
Nitrogen utilization %	**44.46%**	**51.87*** **	**36.45**
Nitrogen in milk	**126,1±5,48**	**132,4 ± 7,24****	**120,4 ± 9,55**
Ca taken/ g	**160,9 ±1,86**	**170,2 ±2,14**	**163,3 ±1,94**
Ca utilization %	**47.04**	**50.82**	**57.37*** **
Ca in milk	**23,9 ± 1,55**	**26,1 ± 2,03**	**25,8 ± 4,75**
P taken/ g	**70,44 ±1,14**	**74,8 ± 1,13**	**71,6 ±0,93**
P utilization %	**75.12**	**77.75**	**79.6**
P in milk	**17,4 ± 4,12**	**22,8 ±1,30**	**20,7 ±2,02**

*** significantly 0.05

MANASEER
Industrial Complex

Biochemical Parameters of The Blood of

Cow groups	Hemoglobin mg/%	Erythrocyte 10^{12}/L	Color indicator	Glutathione mg/% Ratio
1	9,08	6,85	0,69	**3,48**
2	8,22	6,62	0,64	**3,0**
3	10,1	7,47	0,69	12,02



Glutathione peroxide enzyme

Glutathione exists in reduced (GSH) and oxidized (GSSG) states. The ratio of reduced glutathione to oxidized glutathione within cells is a measure of cellular oxidative stress where increased GSSG-to-GSH ratio is indicative of greater oxidative stress.

MANASEER
Industrial Complex

Biochemical Parameters

Cow Groups	Blood serum			
	Protein	Ca	P	Lipids
1	8,06	8,6	4,86	284,0
2	8,06	9,13	4,89	289,7
3	8,09	8,8	4,80	193,0

The increase in the blood total lipids indicate an increase in the lipid metabolism in the which was reflected by elevation of milk fat content.

MANASEER
Industrial Complex

The Use of "Animax "

Enhance antioxidant activity in the cow which improve its health

Increase the FI and digestibility of nutrients

Enhance nitrogen and fat metabolism

Improve milk production and composition

These benefits will elevate The Income of the producer

MANASEER
Industrial Complex

The End

Questions

????