

BIOSA Microbial Inoculants

The Natural Way to Profitability



Hamilton, ON, Canada

www.biosa.com / 905.357.0800

What are BIOSA Microorganisms?

- a mixture of organic Molasses, aromatic herbs and other plants that is fermented by a special combination of lactic acid cultures; During fermentation, lactic acid is formed which gives a low pH value of about 3.5
- the low pH in VitaBiosa¹⁰⁺ gives the feed a fresh acidic smell and stimulates the appetite of all animals
- can be added directly to the wet feed, or put into the dry feed with a dosage pump
- reduce obnoxious smells through their antioxidant properties
- can be used for silage of grass, grains and corn

Biosa portfolio

1. VitaBiosa¹⁰⁺

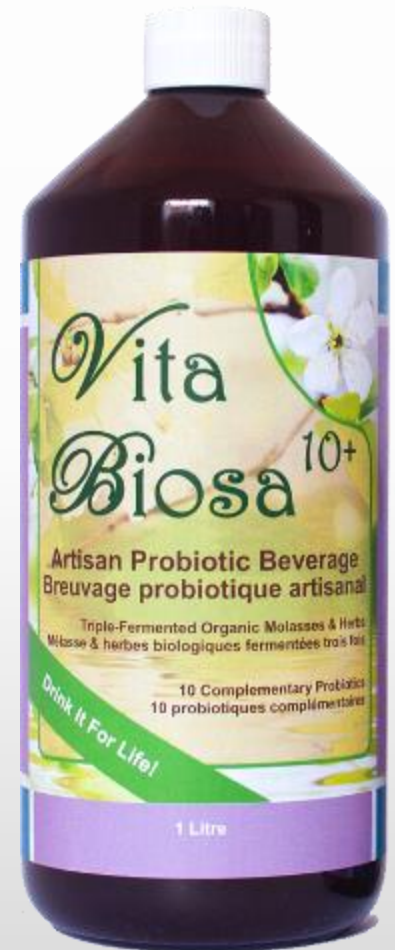
- For Human Consumption

2. AnimalBIOSA aka VitaBiosa¹⁰⁺

- For all Livestock and Pets in particular for Organic Producers

3. TerraBiosa¹⁰⁺

- For all types of crops
- For soil improvements
- For decomposition of organic material in slurry and sewage treatment plants



What are the Benefits of VitaBiosa¹⁰⁺

As antibiotics come to be banned in more and more places, veterinarians and farmers are learning that the use of microorganisms is an effective substitute

- to quickly and effectively restore the natural balance in the digestive system
- restricts harmful bacteria and thus give the beneficial bacteria a better opportunity to multiply and create healthy intestinal flora
- thus resulting in healthier animals and consequent lower veterinarian costs
- on the end, the consumer gets animal products free from contaminants that include traces of antibiotics and salmonella bacteria

Benefits of TerraBiosa¹⁰⁺?

- increases the activity and population of nitrogen-gathering bacteria in the soil
- plants grow larger roots that increases the intake of nitrogen, phosphorus and potassium, which results in higher crop yields
- increases the biological activity of the soil and the rate of decomposition of organic materials
- through the decomposition of this biomass sufficient nutrients are released and new microorganisms build
- eliminates the need for chemical fertilizers, pesticides and herbicides
- consumers have access to a healthier life, through eating more healthier vegetables, fruits and grains

TJ, Juttlund, Denmark

- Farm operation with 132 Holstein cows and 130 hectare farmland
- using VitaBiosa¹⁰⁺ for 3 years at a rate of 100ml activated VB¹⁰⁺ per Cow/day

Production	Before	With BIOSA	% change
Yearly Avg. Milk Production	8,700 ltr / cow	10,000 ltr / cow With 4.2 % fat	+15 %
Death rate among calves	10%	3 %	- 7 %
Feed Units per Hectare of Corn	10,000	14,000	+40 %
Veterinarian Cost per Cow/year	Approx. C\$ 100	Approx. C\$ 20	- 80 %

Dairy Operation Brandenburg - Germany

The effect of VitaBiosa¹⁰⁺ was examined on a herd of 180 dairy cows

- A dose of 100ml of activated VitaBiosa¹⁰⁺ was given per cow per day over the feed
- Effects of a 9 month trial are shown below



Milk Production	Control Group	With BIOSA	% change
Daily prod. Kg/cow	21.0-28.3	25.8-28.6	+ 10 %
Cell numbers/1000	254-402	166-232	- 40 %
Body fat %age	3.55%	3.75%	+ 6 %
Protein %age	3.27%	3.52%	+ 8 %
Urea, mg/l	299	237.3	- 21 %

Dairy Operation – Brandenburg Germany

After 9 month profitability increased by 188 €/dairy cow

Profitability	Calculation	Results
Cell numbers (1 ct/ltr)	150 cows × 5.961 liters = 894.150 liters × 1 ct	8.940 €
Ave. Increase in milk production	150 cows × 819 liters = 122.850 liters × 26 ct	31.941 €
Savings, veterinary expenses	180 cows × 2 € = 360 € × 9 months	3.240 €
Cost of BIOSA Animal	7.500 € for 9 mth. = 27,75 €/150 cow/day 3.55%	0.15 € / cow / day
Working hours	Employees/owners labour for 9 month	2.700 €
Total results	Gains/reductions of expenses: 44.121 € - Additional expenses: 10.200 €	33.921 €

PC, Jutland, Denmark

Tie stall operation with 80 dairy cows

- 50ml of activated VitaBiosa¹⁰⁺ per cow / day
- herd health was improved
- udder infections and mastitis were reduced



Improvements	Before	With BIOSA	% change
Weight of Cows	564 kg	587 kg	+ 4 %
Herd Classification	1.9	2.3	+ 21 %
Cell numbers/1000	650	280	- 57 %
Calves born alive	0.73	1.2	+ 64%
Udder Infections	0.86	0.06	- 93 %
Vet. Costs	6,048.40 €	1,209.70 €	- 80 %

Bradner Farms – British Columbia, Canada

Organic Dairy Operation with 400 cows

- AnimalBiosa is given to Dairy cows at a rate of 100ml / day over the dry feed and 50 ml/day to calves in the milk

Willy Fitzl, Manager Dairy Operations

“ since we started using AnimalBiosa in Aug. 2004, butter fat has gone up from approx. 3.5 to 4.0%”

“ Mastitis cases have decreased dramatically, probably by 60%”

“ All in all, AnimalBiosa is providing a positive effect on our herd...”



Veal-Rite – Ontario

1,000 head Replacement Heifer operation

Activated AnimalBiosa is used as an effective alternative to Antibiotics



- 25 ml/day per calve of AnimalBiosa are mixed into the milk for the first 10 days
- the use of Tetra-Cylene and Neomycin could be reduced to the first 5 days only at 50 % of the previous applied rate

Testimonial

“ AnimalBiosa is easy to mix and easy to apply”

“ with AnimalBiosa scours were reduced”

“ Heifers start at 110lb and are finished to 350lb in a shorter time”

“ the reduced use of Tetra-Cylene and Neomycin results in a substantial cost-savings to us “

Department of Agriculture and Horticulture - Germany

The effect of AnimalBiosa was examined on 155 finishing pigs with a start weight of 29 kg and end weight of 116 kg in 14 weeks

- The research group of 78 pigs were fed 25 ml/pig twice a day while 77 pigs acted as control group.



Results	Control Group	With BIOSA	% change
lean meat %age	55,8%	57,9%	+ 2.1%
feed utilization	3,04 kg/kg	2,86 kg/kg	- 15 to 16 kg/pig
slaughter weight	114 kg	116 kg	1.5 %

HH Pig Farm, Ontario

100 sow farrow to finishing operation

Farrowing Barn

- 2 ltr. Activated AnimalBiosa / tonne applied over soy-meal



Weaner Barn (up to 35 Kg)

- BIOSA is added to the water-trough in the weaner room when the piglets are moved in
- 2 ltr. Activated Animal BIOSA / tonne sprayed over starter pellets and later on over the soy-meal at the same rate

Testimonial

“ ... after weaning, we noticed, that the manure is much firmer and more consistent ...”

Organic Pig Farms – Ontario, Canada

50 sows Organic Farrow to Finishing Operation

VitaBiosa¹⁰⁺ is an effective alternative to conventional antibiotics courses and replacement of growth hormones

- Activated VitaBiosa¹⁰⁺ applied at a rate of 1 ltr. / 400 ltr. of drinking water in weaner barns



Short Term Benefits

- piglets started to feed earlier after weaning due to reduced scour
- In the finishing barn a more even growth between pigs was seen, reducing the time to market to an avg. of 163 days
- mortality rate was reduced by 4 %, resulting in an annual savings of approx. C\$100 / sow (C\$ 5,000 pa)

HM farms, Newmarket Ontario

May 27

- activated TerraBiosa10+ (TB¹⁰⁺) was applied to the soil at a rate of 50 ltr. / acre prior to planting carrots



June 30

- a second application of activated TerraBiosa¹⁰⁺ was applied at a rate of 50 ltr. / acre
- Carrot plants treated with TerraBiosa¹⁰⁺ show longer roots and were more uniform and straighter in their appearance



HM farms, Newmarket Ontario

August

- for two trial plots of 40' length each, the BIOSA carrots were harvested and compared to two adjoining control groups
- In both cases, the weight of the BIOSA carrots exceeded the weight of the control groups by 5 – 7 % respectively
- BIOSA Carrots showed a more consistent weight distribution and were straighter in their appearance



HM Farms, Holland Marsh, Newmarket Ontario

May 7

- activated TerraBiosa¹⁰⁺ was applied to celery plants in the greenhouse

May 29

- celery plants are planted and activated TerraBiosa¹⁰⁺ is applied at a rate of 100 ltr acre 1 week after planting

Aug. 24

- Trial plot was hit with hail and needed to be harvested



Chatham-Kent Organic Epicentre – Dresden Ontario

June

- 50 ltr. of activated TerraBiosa¹⁰⁺ was applied per acre prior to planting of green peppers

July

- a second application at 50 ltr. / acre of activated TerraBiosa¹⁰⁺ was used

August

- On average more green peppers (up to three) were seen on pepper plants where TerraBiosa¹⁰⁺ was applied



What to Expect?

AnimalBiosa aka VitaBiosa¹⁰⁺

- Increased milk production
- Reduced cell counts
- Reduced death rate with newborn calves
- Reduced medication and veterinarian costs
- Increased feed utilization
- Increased slaughter weight
- Increased lean meat %age .

➤ **Increased Profitability in Your Operation**

What to Expect?

TerraBiosa¹⁰⁺

- increased yields and crops
 - increased intake of nitrogen, phosphorus and potassium
 - increased biological activity of the soil
 - produces healthier vegetables, fruits and grains
 - benefits for consumers through eating more healthier vegetables, fruits and grains .
- **Increased Profitability in Your Operation .**

Questions / Answers

BIOSA
Carrots
Mmmmm...
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