

The Benefits of Belta Probiotics

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The background of the slide is a dense, repeating pattern of various tropical leaves in shades of green. The leaves include large monstera leaves with characteristic splits, feathery fern fronds, and smaller, pointed leaves on thin stems. The pattern is centered around a large white oval.

1. Introduction

- One litre
- 500 cc





Somkiet
Panjanapongchai,
President of
Artemis & Angel
Co. Ltd.

Experience in Aquaculture

- His background is in Veterinary Medicine.
- He has over 25 years of experience in aquaculture in Thailand and Vietnam.
- His products played a role in the growth of the Black Tiger Prawn and Whiteleg Shrimp (also known as Pacific White Shrimp or King Prawn) industries in Thailand and Vietnam.
- He is an expert in all areas of fish farming and shrimp farming, including preparing cultures, increasing growth, looking after the health of the fish and shrimps, disinfecting the water, water treatment, and removing toxic residues.



2. The Main Benefits of Belta Probiotics

Improved Digestion

Belta is a high quality, liquid, feed additive based on beneficial pro-biotic bacteria, which make it easier for animals to digest and absorb more protein and minerals.

This ensures a higher weight gain in animals that are raised for dairy and meat production.

What Are Probiotics?

- Probiotics, as defined by the Food and Agricultural Organization of the United Nations (FAO), are "live microorganisms administered in adequate amounts which confer a beneficial health effect on the host."
- The microorganisms referred to in this definition are non-pathogenic bacteria (small, single-celled organisms which do not promote or cause disease), and one yeast, *Saccharomyces*. They are considered "friendly germs," due to benefits to the colon and the immune system.

General Benefits

Belta has been shown to:

- strengthen the immune system;
- improve absorption of vitamins and minerals;
- aid in digestion generally;
- displace harmful bacteria in the digestive tract.

Faster Weight Gain And Health

Belta improves the rate of weight gain and the health of animals by increasing significantly the amount of beneficial digestive pro-biotic bacteria in the digestive tract.

Higher Profits

Because the animals digest the feed better, their growth rate increases, and the animals can be taken to market sooner, which means that less money needs to be spent on raising the animals.

Stronger Immune System

- They become healthier and their immune system is strengthened so that they are much less liable to fall ill.
- The animals do not have to take medicine during the period the farmer is using Belta. The farmer could test this by keeping aside some animals that are not given any medicine.

Speeds Up Recovery Process

- If a herd or group of animals are ill, Belta will not cure them of their illness. But it will help them to become stronger again because it will improve their digestion of proteins and minerals (and also of the medicine, if this has been mixed into their food). It will help their immune system to become stronger again.
- The Belta is useful in that it also helps to prevent the animals from getting ill in the first place.



Healthy cows
means *happier*
cows, and this
results in more
milk and weight
gain.

A Higher Price at Market

In addition, because the animals digest more efficiently, they become heavier and grow healthily. As a result, the farmers can sell them for a higher price.

Benefits for the Manure

The manure becomes more bio-degradable
and beneficial to the soil.

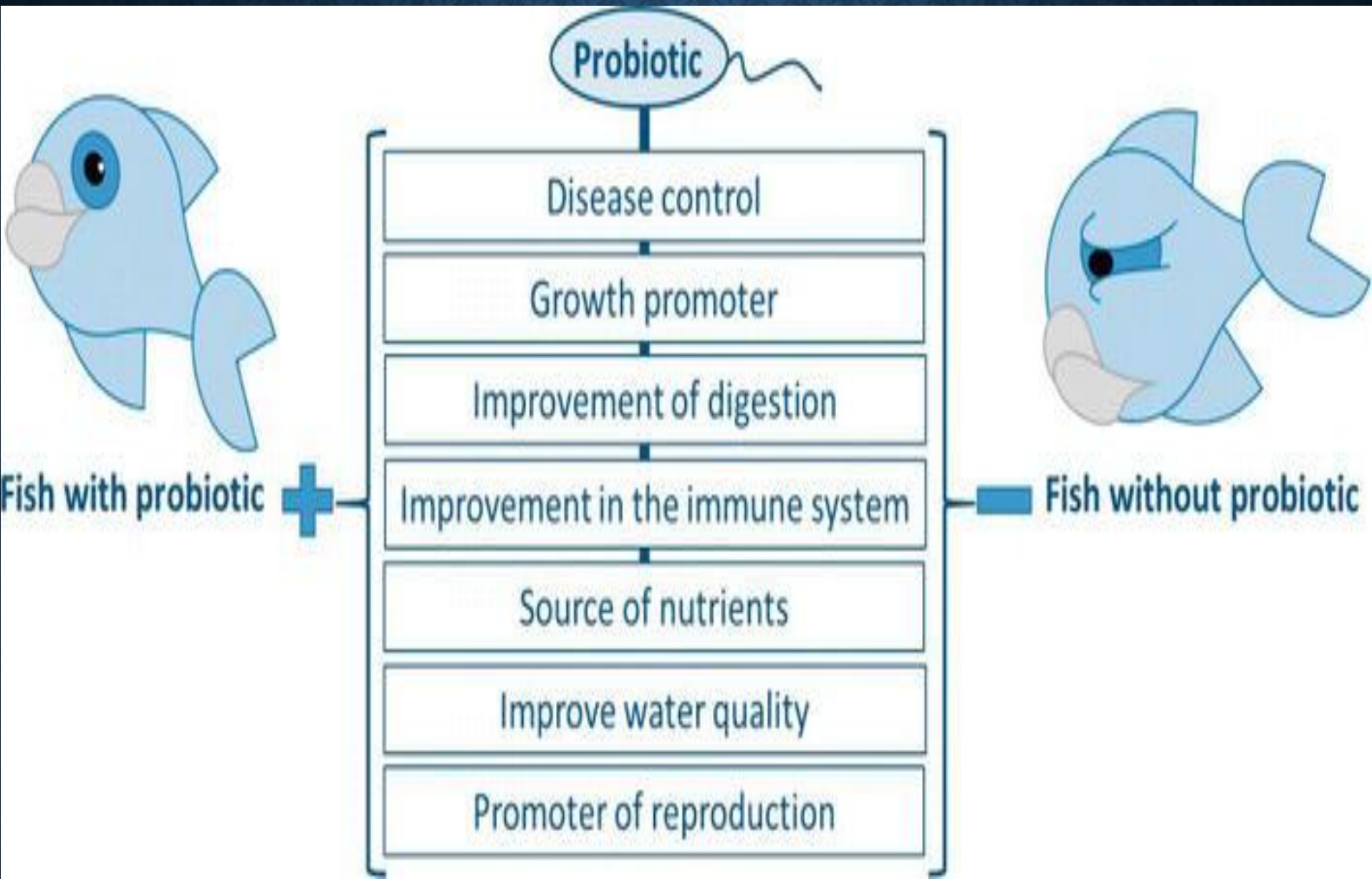
Also, it only has a mild smell.

Common Benefits for Chickens

- Chicken meat has more protein and less fat.
- The final body weight is usually about 12%-15% higher.
- The digestion efficiency is better.
- Increased feed intake by about 8%-10%.
- Food use improves by about 10%.
- The rate of growth is usually about 10%-15% faster.
- Lower cholesterol.



Benefits for Aquaculture



The fish production will increase
when Belta is used.

The fish will be healthy and will not
need to be fed chemicals
and antibiotics.

Benefits for Aquaculture

- More information about the benefits of using probiotics in aquaculture can be found in this article. It summarises research about the benefits.

<https://www.intechopen.com/books/antibiotic-use-in-animals/probiotic-bacteria-as-an-healthy-alternative-for-fish-aquaculture>

Common Benefits For Pigs

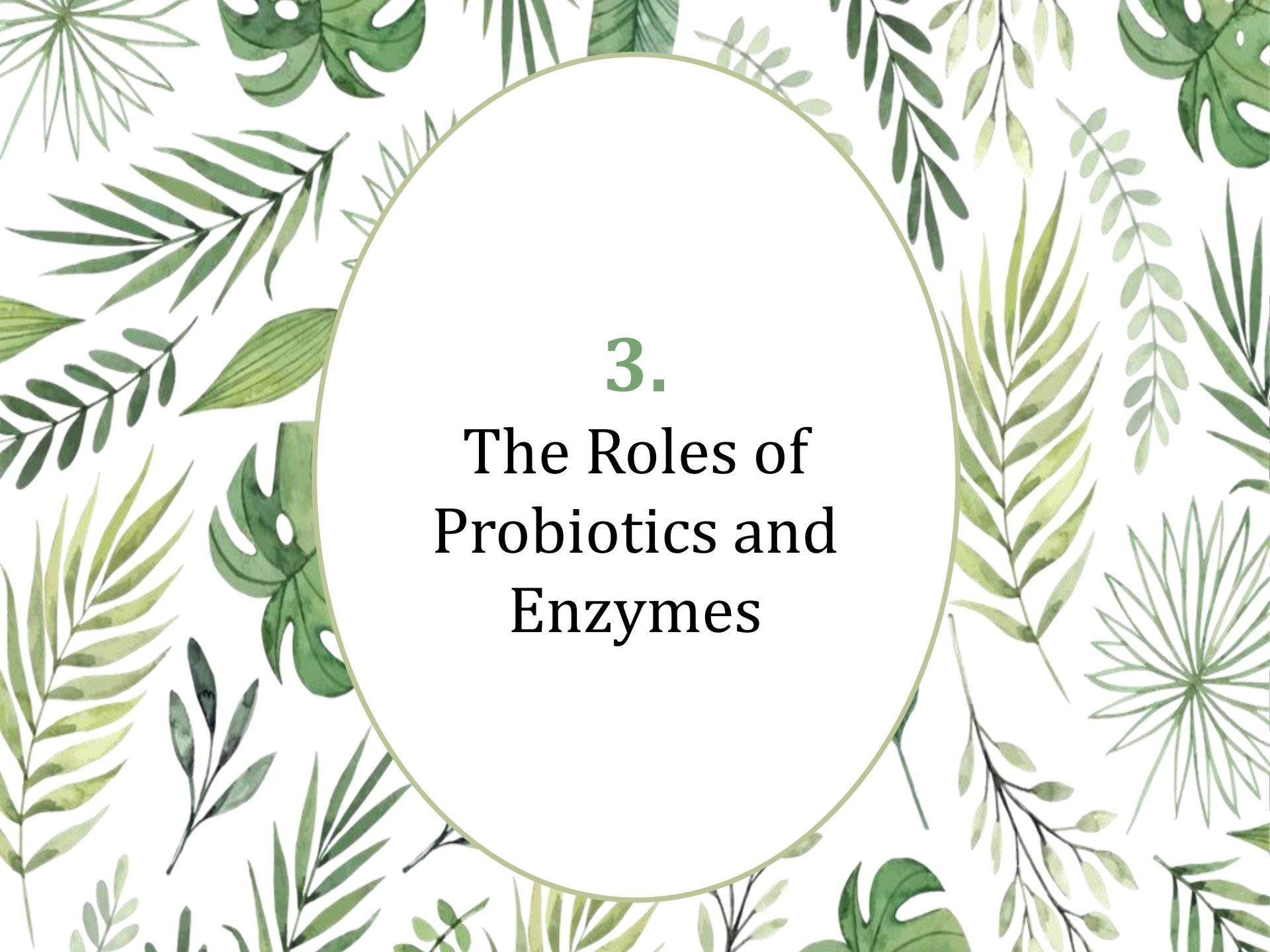


- Pigs fed with Belta convert feed to weight gain more efficiently than those fed without Probiotics.
- Probiotics-fed pigs gain weight faster.

Common Benefits For Pigs



- They have improved immunity to disease.
- The cost of production is lower for the pigs fed with Belta compared to pigs fed in a conventional way.
- Less fat in the meat.



3. The Roles of Probiotics and Enzymes

Understanding the role of enzymes and probiotics is essential to understanding the benefits of Belta Probiotics, and why animals need it.

Some of the Enzymes & Probiotics in Belta

Enzymes

- Protease
- Lipase
- Amylase

Probiotics

- Bacillus Subtillus
- Lactobacillus Phantatrum

The Importance of Enzymes in Stomach Digestion

Without enzymes, digestion could not take place and the food animals eat could not be absorbed and utilized.

The Importance of Enzymes in Stomach Digestion

- Enzymes are complex proteins produced by living cells and they start chemical reactions in the body.
- Enzymes are present in the digestive juices. They act upon food, breaking it down into simpler components the body can use for energy.

The Importance of Enzymes in Stomach Digestion

- The three main enzymes involved in digestion are **amylase**, **protease**, and **lipase**, which are in Belta.
- Other enzymes, such as **sucrase**, **lactase**, and **maltase**, have a significant secondary function in digestion.

The Role of Amylase

- **Amylase** breaks down carbohydrates.
- Saliva contains amylase, which initiates the digestion of dietary starches.
- Pancreatic secretions also contain amylase.
- Amylase breaks down starch into several disaccharides (simpler molecules).

Lactase, Maltase, Sucrase

- Disaccharides, which include lactose, maltose, and sucrose, are further broken down into simple sugars by the enzymes ***lactase***, ***maltase***, and ***sucrase*** respectively.
- These simple sugars can then be absorbed through the small intestine to help energy production.

The Role of Proteases

- *Proteases* break down protein.
- Protein digestion begins in the stomach with the action of the protease, pepsin.
- Proteins are further broken down by pancreatic enzymes in the alkaline environment of the intestine.
- Most proteins are ultimately broken down into amino acids, the building blocks of life.

Lactobacillus

Probiotics, such as **Lactobacillus**, are beneficial non-toxic, live bacteria that are necessary for life and do not cause disease (non-pathogenic).

Probiotics Protect the Gut

By attaching themselves to the intestinal wall, friendly probiotic bacteria keep pathogenic bacteria from gaining a foothold.

Animals Need Probiotics

- Because of the kind of feed that animals are given, and their physical environment, it is common for animals to be lacking in essential probiotic bacteria.
- This has a negative effect on the digestion, on their health, and growth. This is why probiotic supplementation is so important.

Probiotics Provide Protection Against Disease

- In sufficient numbers, these friendly bacteria keep disease-causing bacteria from overpopulating the intestine.
- Also, they improve digestion, manufacture B-vitamins, and boost the immune system activity.
- Because they increase immunity, they positively influence the overall health of the animal.

Probiotics Protect the Gastrointestinal Tract

- Animals get sick when their gastrointestinal tract becomes disrupted and beneficial microorganisms can no longer flourish in needed numbers.
- A common cause of this disruption in the gastrointestinal tract is past and present use of antibiotics.

Probiotics Restore Balance to the Microflora in the Intestines

Normal *microflora* (the term used for intestinal bacteria) is associated with good health. An imbalance in this natural microflora (when the beneficial probiotics are outnumbered by the harmful bacteria) is frequently associated with various disease states, such as yeast infections and colon cancer.

Probiotics Restore Balance to the Microflora in the Intestines

When animals eat feed or take a nutritional supplement containing probiotic bacteria, it helps to support and modify the composition of the large intestine microflora.

Probiotic Bacteria Assist the Process of Digestion

- Microflora of the large intestine assist digestion through fermentation by making the intestines more inhospitable to invading bacteria species; by providing protection against disease-causing bacteria and by stimulating the immune system.
- The probiotics, Lactobacillus and Bifidobacteria, occupy a central role in the intestinal flora and provide health benefits.

What Is the Difference Between Digestive Enzymes and Probiotics?

- Digestive enzymes, such as protease, amylase, and lipase, act upon food, breaking it down into simpler components that can be used by the body for energy. Without enzymes, digestion could not take place.
- Therefore, the food that we and animals eat could not be absorbed and used by the body.
- Probiotics help the enzymes to digest food and process waste.

Digestive Enzymes and Probiotics Improve the Digestion

- In essence, probiotic bacteria and enzymes work together to ensure that the digestive tract is running smoothly.
- When taken together, enzymes assure greater levels of digestion and absorption of food.
- Probiotic bacteria aid the enzymes in the digestion and keep problems in check.

Probiotics Are Needed Regularly

- Although probiotic bacteria may survive passage through the stomach, they do not permanently colonize in the body and need to be replenished.
- Therefore, they need to be ingested regularly for their health-promoting effects to persist.

Conclusion

- The body is dependent upon nutrition. Every building block, every bone cell, even the sheen of the hair and skin, is the result of the food eaten. But what good does it do to select high quality feed if its nutrients are not fully absorbed?
- Enzymes that assure greater levels of digestion and absorption of the feed, and probiotic bacteria that keep problems in check, can make a huge difference in the health of animals.

Conclusion

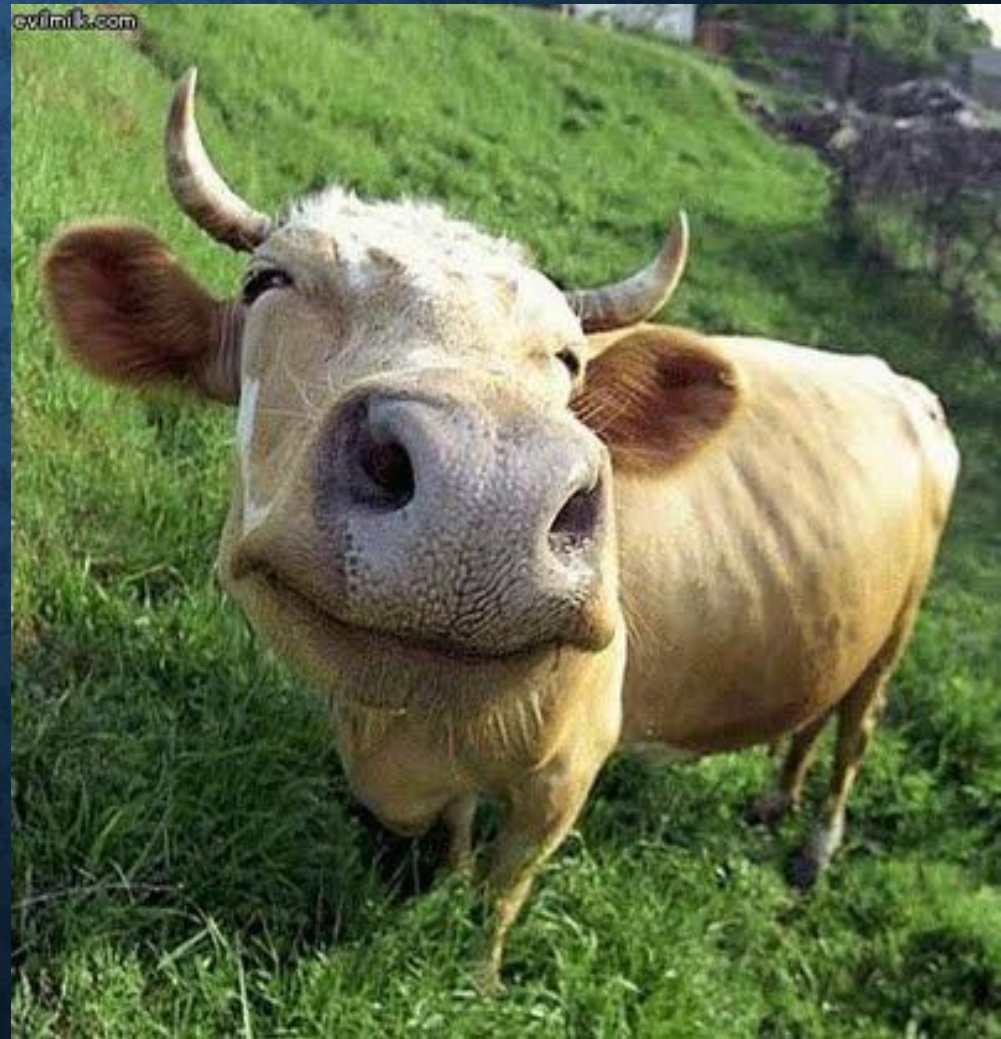
Micro-organisms used as probiotics improve the efficiency of the gut microflora. They improve feed intake significantly, the feed conversion rate, the daily weight gain, and total body weight in chickens, pigs, sheep, goats, cattle, and horses, for example.

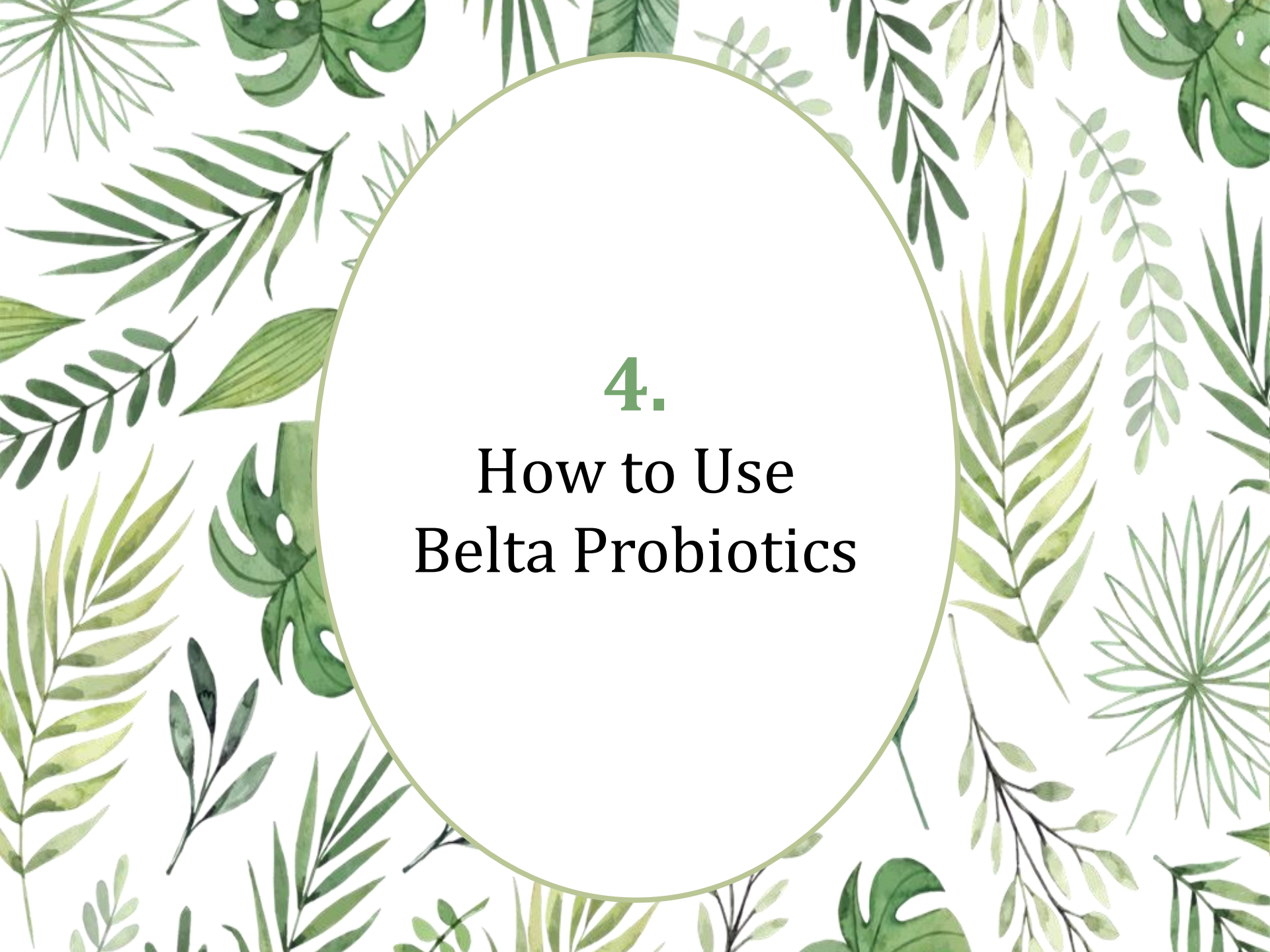


Probiotics have a beneficial effect on milk yields, milk fat, and protein content.

Effect On Meat Production

- Probiotics result in the increased growth and rate of growth of animals.
- They improve the health of animals and make them happy.



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4. How to Use Belta Probiotics

How to Use It

- Belta Probiotics is a liquid. When mixing it with animal feed the easiest way is to pour out the animal feed onto a plastic sheet, spread it out thinly, spray the Belta over the animal feed, and then mix it altogether with a spade or rake.
- If you cannot spray it, then pour it thinly over the animal feed that has been spread out already and then mix it altogether.

How to Use It

Method 1 - Mix It with Animal Feed

- Mix 5 cc with 1 kg of animal feed.
- Mix 1 litre with about 300 kgs. of animal feed.

Method 2 – Mix It with Drinking Water for the Animals

- Mix 5 cc – 10 cc with 100 litres of water.

How To Use It

Amount Needed for 70,000 Animals the Size of Sheep, Cows, or Pigs

- Each animal will need 1 x 500 cc bottle for its life (about 6 months).
- For example, 70,000 animals = $70,000 \times 500$ cc bottles. Or $35,000 \times 1$ litre bottles.
- 70,000 bottles = 3.5 x 20-foot containers.
- 500 cc Size: 1 container holds 1,000 cases x 20 cc bottles = 20,000 bottles.
- 1 litre Size: 1 container holds 612 cases x 20 bottles = 12,240 bottles.

Example of Feeding Goats with Belta Probiotics

- $0.5 \text{ km.}^2 = 50 \text{ hectares}$. 16 hectares for goats.
- Mix 5 gr. of Belta with 1 kg. of feed.
- Production: 20 MT per hectare per 6 months.
40 MT per year. You will need 200 litres of Belta per hectare every 6 months and 400 litres per year.
- Total: 400 litres per hectare per year x 16 hectares = 6,400 litres per year.

Example of Feeding Chickens with Belta Probiotics

- $0.5 \text{ km.}^2 = 50 \text{ hectares}$. 16 hectares of enclosed chicken farms for chickens.
- Mix 5 gr. of Belta with 1 kg. of feed.
- Production: 20 MT per hectare per 2 months. 40 MT of feed per 2 months. You will need 200 litres of Belta per hectare every 2 months and 1,200 litres per year.
- Total: $1,200 \text{ litres} \times 17 \text{ hectares} = 20,400 \text{ litres per year}$.

Example of Feeding Cows with Belta Probiotics

- $0.5 \text{ km.}^2 = 50 \text{ hectares}$. 16 hectares for cows.
50 cows per hectare.
- Mix 5 gr. of Belta with 1 kg. of feed.
- Production: 50 MT per hectare per year. 100 MT of feed per year. So you will need 500 litres of Belta per hectare per year.
- Total: $500 \text{ litres} \times 17 \text{ hectares} = 8,500 \text{ litres}$ per year.

Example of the Amount of Belta Probiotics Needed on a Fish Farm

- $0.5 \text{ km}^2 = 50 \text{ hectares}$.
- 4 months per production period x 3 periods per year.
 - An average production amount is 20 MT per hectare.
 - The fish will need about 40 MT of feed per hectare.
 - Mix 5 gr. of Belta with 1 kg. of feed.
 - You will need 200 litres of Belta per hectare every 4-month production period x 3 production periods per year = 600 litres per hectare per year.
- Total: 600 litres x 50 hectares = 30,000 litres p.y.

Mix Belta Probiotics thoroughly with the fish feed and then throw it into the pond where the fish are.

The fish ponds could be ponds dug into the ground and coated with plastic so that the water does not sink into the soil; or made from concrete.

Commonly Asked Question

If the Belta is used by mixing it in water, how long can we keep that water in the open air?

- The farmer must use the water the same day.

Commonly Asked Question

Will the microbial activity in Belta start when we put it in the water or will it start in the stomach of the animal?

- When Belta is mixed with water, the microbial activity will start to work at once.

Commonly Asked Question

**Can we mix the Belta in water and
then spray it on the feed?**

- Yes. The farmer can mix Belta with animal feed in the same dosage of water quantity.
- For example, if you wish to mix 1 litre of Belta with the animal feed, then mix the litre with 1 litre of water before applying it.

Commonly Asked Question

When can I start using Belta with animals?

- You can start to mix it with water or animal feed from when the animal is a baby.

Commonly Asked Question

Can I apply Belta directly into the mouth without water? If so, how much?

- In the event that there is no controlled farming and the cows graze in the open, you can apply Belta directly into the mouth of the animal mixed with or without water.
- If there is no water trough, the farmer should put 10 cc of Belta straight into the mouth, with or without any water. This applies to large animals, such as cows and buffalos.
- Apply this amount at each feeding time.
- In the case of smaller animals, such as goats and sheep, the farmer should put 5 cc (a teaspoon) of Belta straight into the mouth, with or without water.

Commonly Asked Question

**How long will it take to get the results
from the animal using Belta?**

- The results will start to appear as the digestion process improves, which will be soon. You will notice the difference.
- For example, the effects will soon appear in a higher milk yield, and a faster gain in weight.

Commonly Asked Question

Type of Feed: a) Fibre Feed b) Concentrated Feed

**What kind of feed do you think Belta
will work better with?**

- It doesn't matter which kind the farmer uses with Belta. Belta is going to improve the digestion and absorption of minerals, protein, etc., and this will increase the rate of growth of the animals.

Commonly Asked Question

What will be the increase in the growth and weight of the animal, and in the milk yield?

- Farmers often get 15% increase in weight. Belta Probiotics will increase the food intake and the amount digested. We can only say that the volume of milk will increase, but we cannot say how much. It varies between 10% and 20%. The increase will only take a few days to appear.
- Also, Belta will give the carcass a higher grade. *(cont.)*

Commonly Asked Question

(cont.) What will be the increase in the growth and weight of the animal, and in the milk yield?

- ... The probiotics divert hydrogen metabolism from methane production (which is wasteful of carbon) to acetogens, which results in reduced methane emissions and an increased transfer of carbon from the animal's feed into its growth.

Commonly Asked Question

Why are there much fewer flies that attack animals consuming Belta?

- It is caused by a change in the smell of the animals that results from them becoming healthier.
- Belta improves the immune system and health of the animals.
- Also the fecies smell a lot less. (*cont.*)

Commonly Asked Question

(Cont.) Why are there much fewer flies that attack animals using Belta?

- Belta Probiotics inhibits harmful intestinal bacteria, primarily in the hindgut, which make the feces smell. The Probiotics render the intestinal environment less favourable for the growth of coliforms.
- As a result, the animals create much less of a smell, just like a person who is healthy does not give off a smell.

Commonly Asked Question

What are the kinds of results that farmers get with Belta?

- In short, usually the weight increases about 15%; the animals are healthier and don't seem to fall ill, which reduces medical bills; the milk yield increases; their feces are not smelly; the animals do not seem to give off a smell that attracts insects; and the carcass gets a higher grade. (*cont.*)

Commonly Asked Question

**(Cont.) What are the kinds of results
that Farmers get with Belta?**

- ... As a result, the farmer's costs drop and revenue increases.
- The % increase depends on how long the animals have been using Belta. The benefits become more noticeable the longer the animals use Belta.

Commonly Asked Question

How much will the increase in growth rate be?

- We do not want to over-claim. We have received different results from people trying out Belta ranging from 10% to 20%.
- We have achieved the higher rate with cows, and the lower rate with chickens.
- We have also been told that the improvement with chickens and pigs was around 20%.
- The minimum should be 10% - 20%.



5.

Final Words About Belta Probiotics

Western markets especially are becoming more and more concerned about the welfare of animals, and about whether their animal products were produced with antibiotics, synthetic hormones, or toxic synthetic pesticides.

Belta Probiotics enables producers to produce
meat, milk, eggs, and cheese
from chickens, cows, and goats that is
“Certified 100% Organic” or
“Certified Organic”.

**Improved Health Leads To Happier Animals
and Higher Yields.**





- One litre
- 500 cc

The End