

SHIPURIT-16 (6-32)TM

PRODUCT TECHNICAL DATA SHEET

Chemicals Name: Enzymes, Carbohydrates, Minerals and Essential Amino Acids.

Warning Statement Required: For veterinary use,
Not for human Consumption.

Caution Statement: Keep out of reach of children. Use dust mask to protect and avoid inhalation of product dust (see MSDS). Protect eyes and skin from dust when handling the product. Discard empty container according to local regulations.

Operation Table:

| Principal animal | Product names | Use product level | Indication of product use for production and veterinary effects |
|--|---|--------------------------|---|
| Cattle (Beef and Dairy), Sheep, Goats, Horses, Wild herbivorous animals, Swine, Dogs, Cats, Poultry, Wild birds, Fish. | Shipurit-16 Shipurit-P Shipurit-C Shipurit-F | 1-2kg/ton (0.1-0.2%) | The product SHIPURIT main contribution is the improved efficiency of the animal. The product's primary effects include enhanced production both in milk and beef average daily gain (ADG) while reducing effectively food intake levels. The product improves the digestibility of different feed components in the rumen and intestines, which as a result increases the absorption of nutrients, thereby providing enhanced benefit from the food consumed. SHIPURIT causes increased growth of the bacteria population in the rumen, enhancing the benefit provided by the food consumed, and increasing the supply of amino acids to |

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|-------------------------------|--------------|--|--|
| | | | the intestines. This in turn results in improved economic Efficiency for the producer. The product may avoid or prevent digestive disorders on Mycotoxin based and contaminations of N and P into the environments. |
| Cattle (young calves) | Shipurit-16 | 20-50g per/head/day. To be mixed with the concentrate diet. | To increased rate of weight gain and improve feed efficiency and health of the animal. To avoid or prevent digestive disorders (diarrhea) in young ruminants animals. Avoid contamination of N and P into the environment. |
| Cattle (Milking and dry Cows) | Shipurit -16 | 20-50g per/head/day for all lactation and in the dry period. (1-2 g per 1kg of dry matter intake). | To increase efficiency by shift the metabolism for more milk production and less dry matter intake. For treating digestive disorders (diarrhea) from mycotoxins contamination in milking cows. After two to three weeks of adaptation for the treatments the animal will give more milk and increase the efficiency. Reduce Ketosis. Increase production of Colostrums in Dry cows. Avoid contamination of N and P into the environment. |

SHIPURIT™ Properties:

SHIPURIT is a trademarked ruminant nutrition product designed for livestock rations.

SHIPURIT is comprised of select enzymes, carbohydrates, minerals and essential amino acids that are protected and released in a controlled manner in the rumen and intestinal tract.

The unique composition of the product was carefully designed using the advanced technologies of the animal feed industry to provide for specific physiological needs.

More high quality milk and less feed consumption are achieved by using the Shipurit enzymes, amino acids and minerals composition. All ingredients of the Shipurit are of GRAS (Generally Recognized As Safe by the USA FDA approved ingredients).

Chemicals composition:

Carbohydrates, vegetables proteins, vitamins, amino acids, enzymes, minerals and plant oil.

| Composition | (%) |
|--------------------|------------|
| Humidity (minimum) | 13 |
| Protein (minimum) | 7 |
| Fiber (minimum) | 1.0 |
| Fat (minimum) | 0.5 |

SHIPURIT is produced and marketed by E. H. Smoler consulting research for agricultural science ltd and Vitaluck ltd. The product was developed in Israel by Dr. Eliezer Smoler.

SHIPURIT was also tested in field trials and observations that took place over the last two years with thousands of heads of cattle, in various climatic conditions, under the intensive feeding regimens of the Israeli dairy cattle industry.

Main uses:

SHIPURIT's main contribution is the improved efficiency of the animal.

The product's primary effects include enhanced production both in milk and beef while reducing effectively food intake levels.

SHIPURIT improves the digestibility of different feed components in the rumen and intestines, which as a result increases the absorption of nutrients, thereby providing enhanced benefit from the food consumed.

SHIPURIT causes increased growth of the bacteria population in the rumen, enhancing the benefit provided by the food consumed, and increasing the supply of amino acids to the intestines. This in turn results in improved economic efficiency for the producer.

When added to the planned daily ration, SHIPURIT increases the producer's revenue in two ways: - Increasing production of economy-corrected milk (ECM) by 2 kg/day.

- Reducing food intake by 5%.

The individual producer's calculation will be based on the specific farm conditions (number of heads, milk quotas, summer milk production, winter milk production, etc.).

SHIPURIT assists with the following:

- Stabilization of rumen acids

- Increased metabolism of proteins and carbohydrates
- Enhanced supply of microbial proteins
- Increased level of bypass protein
- Increased level of metabolic protein
- Enhanced absorption of nutrients
- Enhanced performance (milk, ECM, physical growth, feed utilization, economic efficiency)
- Improved milk quality (additional milk solids)
- Improved status of the digestive system (less cases of diarrhea)
- Reduced urea in blood and milk
- Reduced release of nitrogen in the environment
- Reduced release of fluids in the environment

Product Description:

SHIPURIT is invention that comprised of select enzymes, minerals and essential amino acids that are protected and released in a controlled manner in the rumen and intestinal tract. The unique composition of the product was carefully designed using the advanced technologies of the animal feed industry to provide for specific physiological needs. The product increases the efficiency of protein metabolism of the animal by increasing the absorbance of amino acids and carbohydrates from the rumen and the intestinal.

Ingredients:

Contains slow release and protected amino acids, enzymes and minerals.

The process involves the following steps:

SHIPURIT Inc. using basic feeding meal and biotechnology technologies to produce the product:

Step 1. Mixing raw materials. >>> *Step 2.* Reaction between essential ingredients. >>>
Step 3. Spray Drying. >>> *Step 4.* Quality Control tests. >>> *Step 5.* Packaging.

Animal Experiments:

The product was tested in feasibility studies carried out at the metabolic unit of the Israeli Agriculture Ministry's Volcani Center – Agricultural Research Organization.

Shipurit was also tested in field trials and observations that took place over a five-year period with thousands of heads of cattle, in various climatic conditions, under the intensive feeding regimens of the Israeli dairy cattle industry.

Trials and Observation Results for Shipurit-16 (ch-16 formulas, mix enzyme and amino acids):

Dairy Cattle experiments

- ***Kibbutz Beit Kama herd*** – Shipurit®-16, experimental and control groups (total of 80 cows), 60-day observation.
Results: Increased daily milk production by two kg/cow.
- ***Kibbutz Beit Alpha herd*** – Shipurit®-16, experimental and control groups (five months total trial time, including cross-checking of groups), with 20 cows, individual computerized feeders, and robotic milking.
Results: Average daily increase in milk production and milk solids of 1.5 kg, with a maximum of 2.5 kg.
- ***Kibbutz Givat Haim Meuhad herd*** – Shipurit®-16, observed in a commercial herd of 450 cows. Extended study over an 11-month period.
Results: Increased daily ECM production, including in summer, by 2 kg.
- ***Kibbutz Ein Hanatziv herd*** – Trial with 170 cows over 7 months, including cross-checking of the groups.
Results: Increased daily milk production by 2.4 kg, ECM by 1.1 kg (significance level: $p < 0.05$). 5% reduction in feed intake ($p < 0.001$), 6.6% increase in efficiency, as well as significant improvement in summer milk production. (Publicized in *Mashov*, Israeli farmers magazine).
- ***Kibbutz Messilot herd*** – Trial on 70 cattle. Half of the cows in first third of lactation, half of the cows in last third of lactation. Length of the trial – 2.5 months. Results: 1.8 kg daily increase in ECM production, 1.6 kg daily increase in milk production ($p < 0.03$). 6% decrease in feed intake. (Article by Dr. Doron Bar, veterinarian of the Hachaklait veterinary

service, publicized in the Israeli Cattle Breeders Association bi-monthly, *Meshek Habakar Vehachalav (The Dairy and Beef Farm)*.

- **Kfar Vitkin Feed Center** – Observation of 400 cattle over several months.
Results: Improved daily ECM production by 1.9 kg, reduced feed intake by 6%.
- **Volcany Research Center of Agricultural ministry of Israel State (ARO)**,
Article by Dr. Uzi Moallem, Researcher in the Institute of Animal Science
A controlled experiment with on 24 multiparous cows between 10-60 DIM were housed in the individual feeding system barn.
Results: The average DMI in control group was 3% higher than in Shipurit group ($p < 0.02$). Daily milk production was 3.2% in Shipurit group ($p < 0.02$). The fat percentage was 4.3% higher ($p < 0.02$) and fat yield was 6.4% higher ($p < 0.01$) in Shipurit group than in control group. The urea content of the milk was 8.8% higher in control group than in Shipurit group ($p < 0.009$). The average ECM (Economic Corrected Milk-Israeli formula) was 5.9% higher in Shipurit group ($p < 0.0005$) with average addition of 2.8 kg/cows/day. The efficiency of ECM was 6% higher in Shipurit than in control group. The plasma urea concentration was 10% higher in control group cows than in Shipurit ($p < 0.009$).

Beef Stockers experiments

- **Kibbutz Hatzor herd** – Shipurit®-16, experimental and control groups, 120 beef stockers, Israeli Holsteins and mixed breed (Polish imports).
Results: 70 grams more daily gain and feed efficiency achieved by the Shipurit-fed group.
- **Kibbutz Ein Hanatziv herd** – Shipurit®-16, Israeli Holstein and mixed breed stockers in a commercial herd.
Results: 80 grams more daily gain and a 3% reduction in feed consumption by the Shipurit-fed group.
- **Moshav Nahalal herd** – Shipurit®-16, 160 beef stockers.
Results: 76 grams more daily gain and a 0.75% reduction in feed consumption by the Shipurit-fed group ($p = 0.09$).
(Research supervised by Dr. Meori Rosen of the Ministry of Agriculture's Beef Cattle Extension Service).