BoviDrops are natural supplements that contain high levels of vitamins to support nutritional levels in cows, especially through periods of stress.

USE BOVIDROPS DURING
- Extremely high production
- Poor cleaning
- Breeding
- General Health and SCC issues
- Pre-calving and Calving

VITAMINS A, D, & E AND ORGANIC FLAXSEED OIL
- Maintain the immune system
- Maintain reproductive performance
- Have a positive influence on fertility & conception rate

VITAMINS FOR THE CALF
- When given before calving, the newborn calf’s health is improved for a head start on growth and development
- More nutritious colostrum milk
BoviDrop Capsules: A POWERHOUSE OF VITAMINS

- **VITAMINS A, D, & E**
  - Maintain immune system
  - Maintain reproductive performance
  - Have a positive influence on fertility & conception rate

- **ORGANIC FLAXSEED OIL** (Omega 3)
  - Excellent source of Omega 3
  - Maintains immune system
  - Maintains reproductive performance

**Features & Benefits:**

- **VITAMINS FOR CALF**
  - Application of the capsule before calving improves the health of the newborn calf by giving amounts necessary for proper growth and maintenance
  - Provides vitamins assuring more nutritious colostrum milk

- **BoviDrops contain high levels of vitamins to support nutritional levels in cows which helps with reproductive performance and maintaining the immune system. Feed during breeding, before & during calving, during transition, and other periods of stress.**

- **Use BoviDrops for cows undergoing periods of stress:**
  - Extremely high production
  - Twin calves
  - Poor cleaning
  - General health or SCC issues
  - During breeding
  - Pre-calving & during calving

- **Ingredients:**
  - Organic Flax Seed Oil, Vitamin E Supplement, Vitamin A Palmitate, Cholecalciferol (source of Vitamin D3), Titanium Dioxide, Water, Gelatin, Glycerin, Yellow 5, Blue 1, Red 40.

**Available Sizes:**

- **Capsule size:** 0.58 oz (16 g)
  - 30 count jar SKU# 301004
  - 60 count jar SKU# 301007
  - 500 count pail SKU# 301011

**Guaranteed Analysis (per capsule):**

- **Vitamin A, min** ............. 1,000,000 IU

- **Vitamin D \_min** ............. 100,000 IU

- **Vitamin E, min** ............. 2,000 IU

- **Alpha Linolenic Acid (Omega 3), min** ............. 5,000 mg

**Directions For Use:**

Feed 2 capsules at freshening and 7 days pre-calving for best results.
Feed 2 capsules 7 days before breeding.

**Storage and Handling:**

Store in a cool place protected from light and moisture. Keep out of reach of children.

Use as directed. Van Beek Natural Science warrants that the product contained herein meets the guarantees set forth on this label. There are no other warranties expressed or implied.

**Improving Reproduction Performance**

BoviDrops contain high levels of vitamins to support nutritional levels in cows which helps with reproductive performance and maintaining the immune system. Feed during breeding, before & during calving, during transition, and other periods of stress.

**BoviDropper Capsules:**

BoviDrop Capsules contain the essential vitamins needed during calving time. Listed below are the vitamins and the role they play in reproduction.

- **Vitamin A**
  - Vitamin A is important for dairy cows because it prepares the uterus and reduces chances of early abortion. “Cattle Today” states that signs of vitamin A deficiency in breeding herds include lowered fertility and calving percentage. Cows abort, deliver dead or weak calves, and are difficult to settle.

- **Vitamin D**
  - Vitamin D is also important for dairy cattle during reproduction and lactation because of its positive influence on fertility and conception rate. Kansas State University has studied the influence of vitamin D supplementation on reproductive performance in dairy cattle. Results suggest that vitamin D supplementation has a positive influence on the intensity of estrus (heat). The experimental cows showed estrus 16 days earlier and conceived on an average of 37 days sooner.

- **Vitamin E**
  - Vitamin E is important for dairy cows because it protects the uterus from damage caused by endometritis (uterine infection) in dairy herds having low levels of these nutrients. These herds were injected with a vitamin E-selenium combination about three weeks prior to calving. Because other factors can be related to retained placenta, such as reproductive diseases and stress conditions, vitamin E may not always help correct the problem.

BoviDrop Capsules are an excellent source of these essential vitamins. Van Beek Natural Science recommends giving two capsules orally seven days before calving or the day of calving.

**Features & Benefits:**

- **VITAMINS A, D, & E**
  - Maintain immune system
  - Maintain reproductive performance
  - Have a positive influence on fertility & conception rate

- **ORGANIC FLAXSEED OIL** (Omega 3)
  - Excellent source of Omega 3
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  - Maintains reproductive performance

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In 2002, Dr. Jesse Goff and other researchers performed a study at the National Animal Disease Center in Ames, Iowa. They began the study with 18 pregnant Jersey dairy cows and surgically removed the udders of 10 of these cows. All 18 cows were allowed to calve normally. Daily blood samples were collected from each cow beginning 2 weeks before calving and continuing 2 weeks into lactation. The researchers analyzed the Vitamin A and Vitamin E levels in the blood.

In the graphs shown, the cows with udders are represented as blue boxes and the cows with no udder are represented as purple boxes. As can be seen on the graphs, the Vitamin A and Vitamin E levels in the cows’ blood began dropping approximately 7 days before calving. However, the cows with a milk producing udder experienced much lower levels of Vitamin A and Vitamin E in their blood than the cows with no udder. This drop in blood vitamin levels is due to the fact that colostrum contains very high levels of Vitamin A and Vitamin E. In order to give her calf the best chance of survival, the cow risks her own health by secreting as many vitamins into the colostrum as possible.

Milk also contains high levels of Vitamin A and Vitamin E. The graphs show that even after 15 days on the milk cow ration, the blood levels of Vitamin A and Vitamin E still had not returned to the levels that they were before calving.

Below are the results from a field trial conducted on a dairy operation in Independence, WI. Two BoviDrop capsules were given once a week for three weeks. The average Somatic Cell Count dropped by 78% by the next testing.

**BoviDrop Capsule Field Trial Results**

<table>
<thead>
<tr>
<th>Cow #</th>
<th>Before</th>
<th>3 Weeks After</th>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>5951</td>
<td>295</td>
</tr>
<tr>
<td>192</td>
<td>4036</td>
<td>753</td>
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<td>601</td>
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<td>212</td>
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<td>138</td>
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<td>25</td>
</tr>
<tr>
<td>230</td>
<td>108</td>
<td>69</td>
</tr>
<tr>
<td><strong>AVERAGE</strong></td>
<td><strong>2,436</strong></td>
<td><strong>539</strong></td>
</tr>
</tbody>
</table>

**SCC reduction!**

**PROTOCOL: 2x3**

2 BoviDrops were given once a week for 3 weeks.

**Lower your Somatic Cell Count**

**BoviDrop Capsules and SCC**

Below are the results from a field trial conducted on a dairy operation in Independence, WI. Two BoviDrop capsules were given once a week for three weeks. The average Somatic Cell Count dropped by 78% by the next testing.
“Our goals for lowering SCC are being met by BoviDrops.”

“It took a little while to see the results, but the cows really improved,” says Jim Bush, who with his wife Meg and son Ryan operates Busholm Farms near Elmira (Chemung County), New York. “We have used BoviDrops for six months, mainly giving the capsules to high-SCC cows identified on the DHI test. We gave two BoviDrops to 11 high-count cows and 7 or 8 were really lowered by the next month’s test. Sometimes, we will give another dose of two BoviDrops to get them down where we want them. For me, BoviDrops are an easy way to lower the SCC. It’s just another tool to manage somatic cell counts properly.”

BUSHOLM FARMS – Jim, Meg and Ryan Bush – Elmira, New York
50 registered Holsteins – RHA 20,000 (2x)

“Simple product can make such a positive impact on herd health.”

“We have always battled with higher cell counts on test day with our fresh cows, especially with our first calf heifers. We CMT and treat several times with a broad-spectrum antibiotic. A very sensitive to specific bacteria causing mastitis if a more specific diagnosis is needed. Bacteria are sensitive to specific antibiotics, which also may be encouraged by the culture of milk.”

Daley Farms LLP – Curtis Alexander – Pine Island, MN
900 Cow Dairy

“Our goal was high, but we took out our herd average SCC from 580,000 to 155,000 in 18 months.”

“I manage two dairies in Visalia, CA totaling 2,800 milking cows. We were introduced to the Van Beek Natural Science product line in the fall of 2001. When I took over the dairy, the first order of business was to fix the somatic cell count (SCC). Once the milking procedures in the parlor were modified, the next step testing the SCC was to administer two BoviDrops one time on all High SCC cows. Our goal was high, but we took out our herd average SCC from 580,000 to 155,000 in 18 months.”

VISALIA, California- Jose Campos - General Manager

“Reduction in Somatic Cell Count in Dairy Cattle”

Somatic cell count (SCC) is the total number of cells per microliter in milk. Primarily, SCC is composed of leukocytes, or white blood cells, that are produced by the cow’s immune system to fight an infection in the mammary gland, or mastitis. Since leukocytes in the udder increase as the inflammation worsens, SCC provides an indication of the degree of mastitis in an individual cow or the herd if bulk tank milk is monitored.

An infiltration of the mammary gland may result in clinical mastitis with varying degrees of visible signs of the disease or subclinical mastitis where no visible symptoms occur. Pathogenic bacteria enter the udder via the teat canals move into the teat canal and cause an infectious response. Coagulase-negative staphylococci (Staphylococcus epidermidis and Staphylococcus aureus) are more difficult to control than environmental pathogens such as coliform. The goal of a sound mastitis control program is to minimize bacteria that enter the udder plus minimize the growth of bacteria in the udder.

Monitoring SCC is especially critical in diagnosing cows with subclinical mastitis since no visible signs of an infection are observed by the dairy producer. Culturing bacteria in the milk of an individual cow may be used to determine bacteria causing mastitis if a more specific diagnosis is needed. Bacteria are sensitive to specific antibiotics, which also may be encouraged by the culture of milk.

Prevention Through Nutrition Increasing a cow’s resistance to mastitis pathogens on the teat-end is an important component of immunity in the dairy cow. Nutrition is involved in maintaining immunity, inadequate energy or deficiencies affect resistance. Dairy cows are deficient in nutrients that are related to immuno-compatibility.

A balanced ration with proper amounts of minerals and vitamins improves the ability of a cow to ward off bacterial challenges. Recent research does show selenium and vitamin E are related to healthy tissue in the mammary gland.

Reducing SCC improves milk production.

Producing milk with low somatic cell counts is a necessary and profitable management tool. Maintaining healthy cows through proper nutrition is the first requirement. Practices contributing the most to decreasing SCC are controlling mastitis and culling cows with a high SCC count. SCCs in bulk milk are monitored by DHI with SCC contribute to profit by monitoring results of management procedures that decrease exposure of test-ends to pathogens. Proper milking practices including teat dipping, sanitary management and dry-cow therapy based on cultures of individual quarters are the most important components of a mastitis control program. Lowering somatic cell count from 600,000 to 300,000 increases milk yields by $50 per cow per year, which is a small fraction of the total benefits. 11

Herds with bulk tank SCC above 200,000 will have varying degrees of subclinical mastitis present.

Data from the National Mastitis Council (1987) show that 4% of the [udder] quarters in a herd could be expected to be infected in a herd with bulk SCC of 200,000.”

Importance of Decreasing SCC

Federal law allows milk to be sold only if the bulk tank has a SCC of less than 400,000/ml. The primary reason for dairy producers to reduce SCC is because SCC relates to milk losses due to mastitis. If we can reduce their SCC from 600,000 to 200,000 cells/ml, they can decrease milk production losses by 600 pounds per cow per year. In a 100-cow herd, these losses amount to $7,500/year if milk is valued at $12.50/cwt.

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