# Helps Newly-Received Calves Help Themselves.

**Bovi-C** is the first rumen-protected vitamin C with more than 60% rumen bypass potential. **Bovi-C** is an All-Natural product that will improve your calf receiving program. Bovine respiratory disease (BRD) plagues feed yards by increasing morbidity and death-loss. Although BRD is not caused by one microbe in particular, the first response of the calf's body is the same for all disease microbes — surround and rupture them. The result of this first immune response is the generation of free radicals, or byproduct of immune cell metabolism. One of the main reasons calves get sick is the decreased ability to handle a higher level of free radicals. Veterinarians and nutritionists refer to a high level of free radicals in the body as oxidative stress. Excess levels of free radicals damage all types of cells and prevent immune cells from recharging and returning to their jobs. The antioxidant vitamins A, C, and E serve as the body's way of neutralizing these free radicals.

BOVI

# Fills the Gap Between Morbidity and Health

A healthy calf will have a vitamin C level in the blood between 2 and 3 uM/L. Once they are at this level and are in a positive energy balance they will produce all the vitamin C they need on their own. Stressed calves that arrive at a feed yard will normally have less than 1 uM/L of vitamin C in their blood. For the body to produce vitamin C it must have the sugars that are stored in the liver (glycogen). Long – hauled calves that have eaten very little for several days and have used up their glycogen can not produce vitamin C. For this reason vitamin C levels drop when calves are shipped cross country and BRD proliferates. **Bovi-C** can spare the body from making vitamin C and conserve valuable liver glycogen for other uses. **Bovi-C** fills the gap so calves can get healthy.

# Receiving Study

| | |
|---|---|
| Site of study: | -Pratt County KS |
| Type of calves: | -92 steers, bulls, and heifers (500#) from east TN sale barn |
| Health program: | Calves vaccinated upon arrival and given Excede (Pfizer Animal Health, NY, NY) @1.5cc/CWT<br>-Treatment program was Draxxin (Pfizer) @1.0cc/CWT |
| Study design: | 60% concentrate starter ration (rolled corn, alfalfa, CS hulls) completely randomized design with two treatments:<br>1. Control (no vitamin C)<br>2. Experimental (8 gms/hd/day of **Bovi-C**) |
| Blood work: | 25% of calves in each group bled for vitamin C upon arrival and after 21 days. |
| Results: | no difference in DMI<br>-24% (11/46) of control calves were pulled for BRD<br>-2% (1/46) of experimental calves were pulled for BRD |

| Bloodwork (uM vit. C/L)* | Arrival | 21-days |
|---|---|---|
| Control | 0.81+ 0.12 | 1.24+ 0.22 |
| Exp. | 0.76+ 0.13 | 2.32+ 0.14 |

*levels of fully-fed and healthy calves are 2-3 uM vit. C/L, according to Chirase (2002)

# Receiving Study Economics

| | Control | Experiment |
|---|---|---|
| # hd | 46 | 46 |
| DOF | 21 | 21 |
| **Cost** | | |
| Medicine cost($/hd) | $20.00 | $20.00 |
| Processing cost ($/hd) | $20.00 | $20.00 |
| Total cost ($/hd) | $40.00 | $40.00 |
| Incidence of treatment | 24% | 1% |
| # of hd treated | 11 | 1 |
| **Total Cost** | $441.60 | $40.00 |
| Daily cost of **Bovi-C** ($/hd/day) | - | 0.14 |
| Total cost of **Bovi-C** ($/hd/21 days) | - | $2.94 |
| Total cost of **Bovi-C** (cost/46hd/21 days) | - | $135.24 |
| **Total Cost** | $441.60 | $175.24 |
| ROI for **Bovi-C** | | 2.52 to 1 |