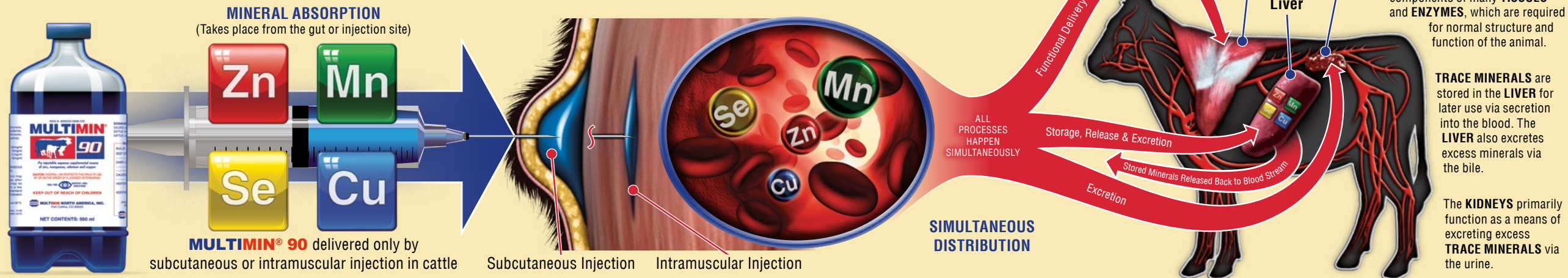


MULTIMIN[®] 90
Udderstanding Margin

HOW DOES MULTIMIN® 90 WORK?

MULTIMIN® 90 pre-treatment supports an existing well designed feed program by by-passing several factors that prevent adequate absorption of trace minerals delivered via forage, feed, water, or pastes and drenches:

- Antagonists in feed, water, forage and distillers grains
- Variable feed intake by individual cows/heifers, including factors causing loss of appetite
- Overcrowding of bunk space, dominance in herd and stress, reducing trace mineral retention ability.
- Calving and beginning of lactation, where higher levels of trace minerals are critical for immunity and reproductive efficiency.

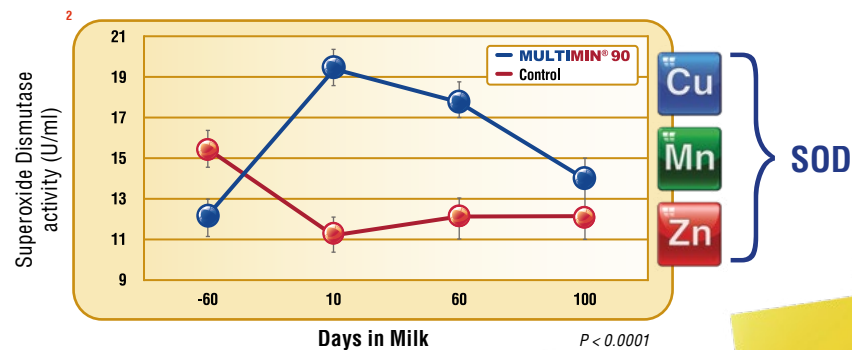


CORNELL UNIVERSITY STUDIES

3 SHOT DAIRY PROTOCOL:

- **MULTIMIN® 90** treated cows were injected at dry-off, 30 days prior to calving and 35 days in milk. Voluntary waiting period – 50 days.
- All cows received a diet that had been formulated to meet or exceed the NRC nutrient requirements for lactating cows.

Study Results

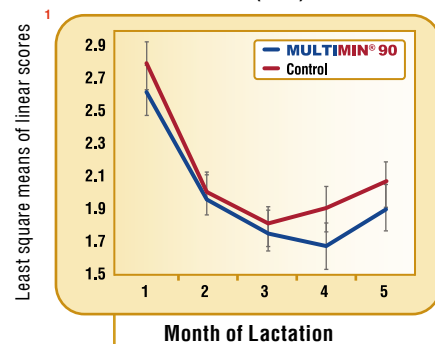


Udder Health

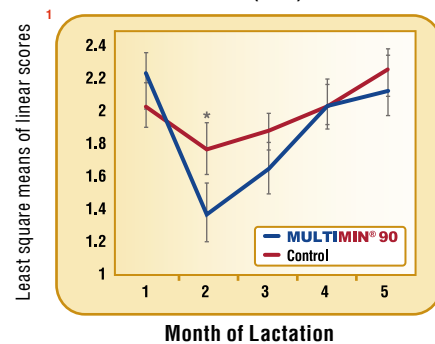
Somatic Cell Count

Trial data from Cornell University showed Somatic Cell Counts were reduced from 299,660 to 218,964. A significant benefit!

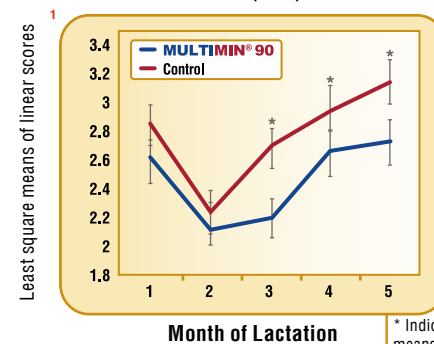
Somatic Cell Count (SCC) 1st Lactation



Somatic Cell Count (SCC) 2nd Lactation



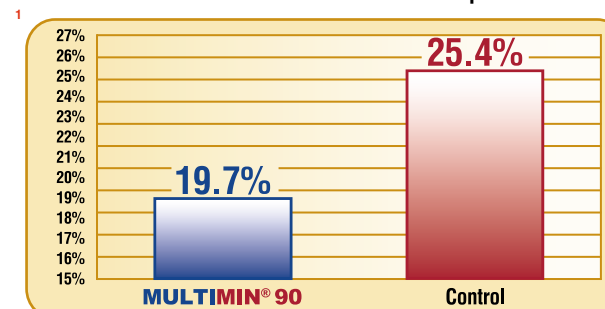
Somatic Cell Count (SCC) >2 Lactations



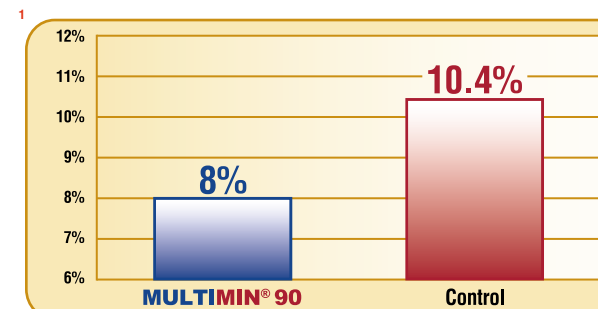
5 Month Study Period

Clinical & Subclinical Mastitis

Incidence of CLINICAL MASTITIS in Multiparous Cows

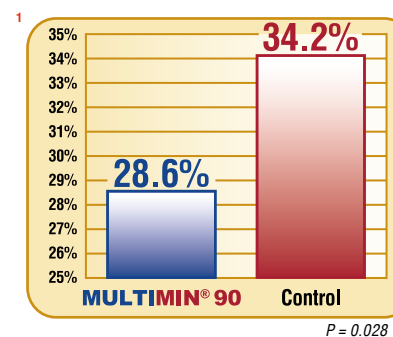


Incidence of SUBCLINICAL MASTITIS

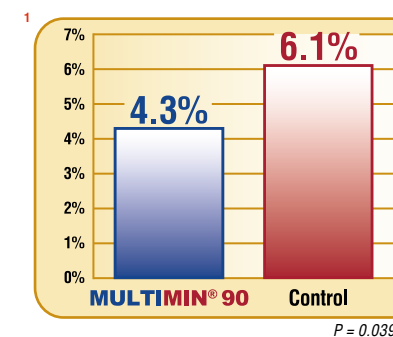


Reproduction & Health

Incidence of ENDOMETRITIS

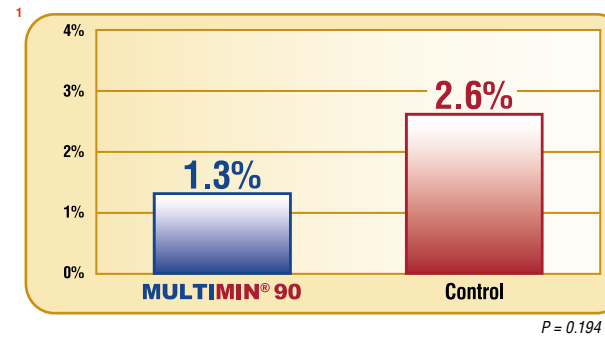


Incidence of STILLBIRTH

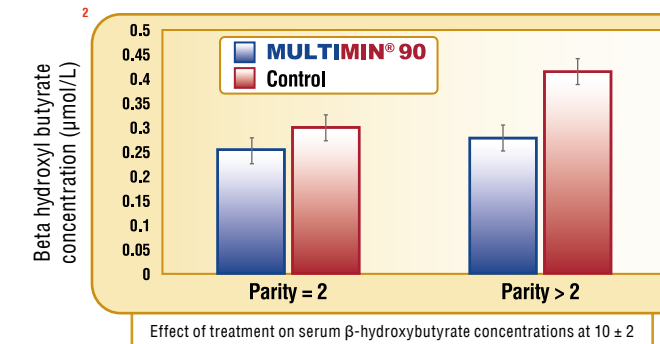


³ Multimin treatment significantly reduced the presence of bacteria in the uterine lumen that can be detrimental to uterine health and reproductive performance.

Incidence of DISPLACED ABOMASUM



Serum BHBA



Effect of treatment on serum β -hydroxybutyrate concentrations at 10 \pm 2 days in milk. The interaction term treatment \times parity was significant with a larger effect of treatment observed for cows with parity > 2 ($P = 0.049$).

"WE'VE INCREASED OUR FIRST SERVICE HEIFER CONCEPTION RATE BY 11% WITH MULTIMIN® 90!"

Per year, we look at **MULTIMIN® 90** as an investment in our operation.



Jonathan Lee
Lee Dairy Farms
Englewood, TN

"FINDING THINGS THAT PREVENT PROBLEMS IS WHAT I'M ALWAYS LOOKING FOR AND THAT'S WHAT MULTIMIN® 90 DOES."

I find that **MULTIMIN® 90** really works well as a production tool. My clients didn't want to just use it as a patch on their management, but they found **MULTIMIN® 90** truly enhanced production that was already in place.

For me, it's just plain science – plus I've seen a lot of good results out of using **MULTIMIN® 90**.

That's why I keep recommending **MULTIMIN® 90** – It works!



Dr. Kirksey, DVM
Natchez Creek Veterinary Clinic
Madisonville, TN

"FOR OUR PRACTICE, MULTIMIN® 90 IS AN IMPORTANT TOOL IN OUR TOOLBOX"

One of the things we like about **MULTIMIN® 90** is its ease of use. We like to implement it every time we're vaccinating.

Another time we use **MULTIMIN® 90** is when temperatures are severe. And anytime we put in embryos.



Dr. Dustin Davis, DVM
Laurel Highlands Animal Health
Somerset, PA

Reference:

¹ V.S. Machado, M.L.S. Bicalho, R.V. Pereira, L.S. Caixeta, W.A. Knauer, G. Oikonomou, R.O. Gilbert, R.C. Bicalho, "Effect of an injectable trace mineral supplement containing selenium, copper, zinc, and manganese on the health and production of lactating Holstein cows" The Veterinary Journal (2013), <http://dx.doi.org/10.1016/j.tvjl.2013.02.022>

² V.S. Machado, G. Oikonomou, S.F. Lima, M.L.S. Bicalho, C. Kacar, C. Foditsch, M.J. Felipe, R.O. Gilbert, R.C. Bicalho, "The effect of injectable trace minerals (selenium, copper, zinc, and manganese) on peripheral blood leukocyte activity and serum superoxide dismutase activity of lactating Holstein cows" The Veterinary Journal (2014), <http://dx.doi.org/doi:10.1016/j.tvjl.2014.02.026>

³ V.S. Machado, G. Oikonomou, M.L.S Bicalho, W.A. Knauer, R. Gilbert, R.C. Bicalho, "Investigation of postpartum dairy cows' uterine microbial diversity using metagenomic pyrosequencing of the 16S rRNA gene" Veterinary Microbiology Journal, <http://doi.org/10.1016/j.vetmic.2012.04.033>

KEEP OUT OF REACH OF CHILDREN

MULTIMIN® 90

An injectable aqueous supplemental source of zinc, manganese, selenium and copper

CAUTION: FEDERAL LAW RESTRICTS THIS DRUG TO USE BY OR ON THE ORDER OF A LICENSED VETERINARIAN.

ACTIVE SUBSTANCES PER ML:

Zinc..... 60 mg/mL
Manganese..... 10 mg/mL
Selenium..... 5 mg/mL
Copper..... 15 mg/mL

CAUTION:

Slight local reaction may occur for about 30 seconds after injection. A slight swelling may be observed at injection site for a few days after administration. Use standard aseptic procedures during administration of injections to reduce the risk of injection site abscesses or lesions.

OTHER SUBSTANCES:

Chlorocresol 0.1% w/v (as preservative).

DOSAGE RECOMMENDATIONS:

CALVES: Up to 1 year 1 mL/per 100 lbs. bodyweight
CATTLE: From 1-2 years 1 mL/per 150 lbs. bodyweight
CATTLE: Over 2 years 1 mL/per 200 lbs. bodyweight

DIRECTIONS:

This product is only for use in cattle. MULTIMIN® 90 is to be given subcutaneously (under the skin) ONLY.

It is recommended to administer the product in accordance with Beef Quality Assurance (BQA) guidelines. Minimum distance between injection sites for the MULTIMIN® 90 product and other injection sites should be at least 4 inches.

PRECAUTION:

Selenium and copper are toxic if administered in excess.

Always follow recommended label dose. Do not overdose.

It is recommended that accurate body weight is determined prior to treatment.

Do not use concurrently with other injectable selenium and copper products.

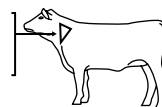
Do not use concurrently with selenium or copper boluses.

Do not use in emaciated cattle with a BCS of 1 in dairy or 1-3 in beef.

Consult your veterinarian.

Inject under the loose skin of the middle of the side of the neck. Max volume per injection site is 7 ml.

Subcutaneous injection in middle of side of neck.



Store Between 15°C and 30°C (59°F and 86°F).

SUPPLEMENTATION PROGRAM

BULLS	3 times per year
BEEF COWS	4 weeks before breeding 4 weeks before calving
DAIRY COWS	4 weeks before calving 4 weeks before insemination at dry-off
CALVES	at birth at 3 months and/or weaning
HEIFERS	every 3 months – especially 4 weeks before breeding

(program gives planned dates that can be varied to suit management programs)

DOSAGE TABLE

ANIMAL WEIGHT (lbs)	CALVES UP TO 1 YEAR 1 ml/100 lb BW	CATTLE 1 - 2 YEARS 1 ml/150 lb BW	CATTLE > 2 YEARS 1 ml/200 lb BW
50	0.5 ml	-	-
100	1 ml	-	-
150	1.5 ml	-	-
200	2 ml	-	-
300	3 ml	-	-
400	4 ml	-	-
500	5 ml	-	-
600	6 ml	-	-
700	7 ml	-	-
800	-	5.3 ml	-
900	-	6 ml	-
1000	-	6.6 ml	5 ml
1100	-	-	5.5 ml
1200	-	-	6 ml
1300	-	-	6.5 ml
1400	-	-	7 ml

Packaged in 100 mL & 500 mL size

NDC No. 49920-006-01
NDC No. 49920-006-05

To learn more visit:
WWW.MULTIMINUSA.COM



MANUFACTURED FOR:
MULTIMIN
NORTH AMERICA, INC.
Fort Collins, CO 80528

