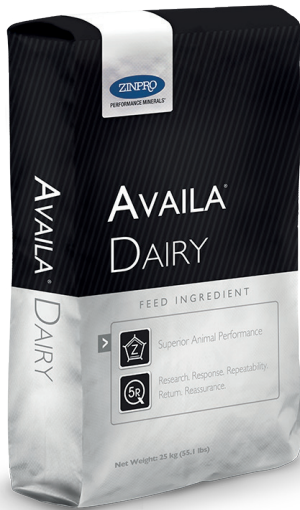


Availa® Dairy: Maximum Herd Health and Performance

Zinpro Corporation is committed to developing superior complexed trace mineral products for the dairy industry. Availa® Dairy is a nutritional feed ingredient for herds seeking additional performance, that contains a specific combination of complexed zinc, manganese, copper and cobalt. When fed as part of a well-balanced diet, these trace minerals can help improve skin and hoof integrity, feed efficiency, fertility and reduce somatic cell count. The Availa-Dairy product formulation features increased levels of zinc, manganese and cobalt, and a lower level of copper.



Feeding Recommendations Feeding Rate: 0.06% of Diet Dry Matter

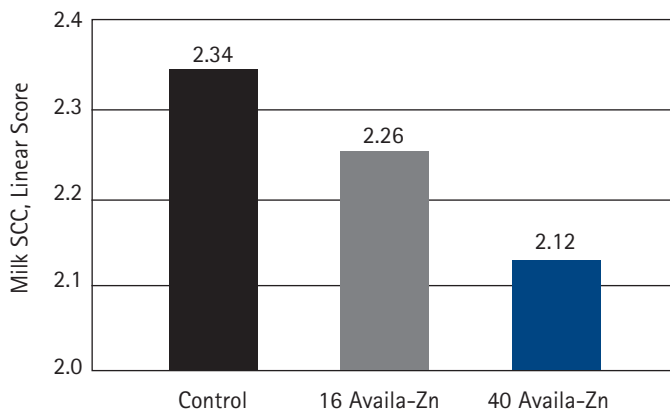
When fed as directed, Availa-Dairy supplies 40 ppm Zinc, 20 ppm Manganese, 3.5 ppm Copper and 1 ppm Cobalt.

Dry Matter Intake		Availa-Dairy g/hd/day
lb	kg	
25	11.3	6.8
30	13.6	8.2
35	15.9	9.5
40	18.1	10.9
45	20.4	12.2
50	22.7	13.6
55	24.9	15.0
60	27.2	16.3
65	29.5	17.7

Increased Levels of Zinc

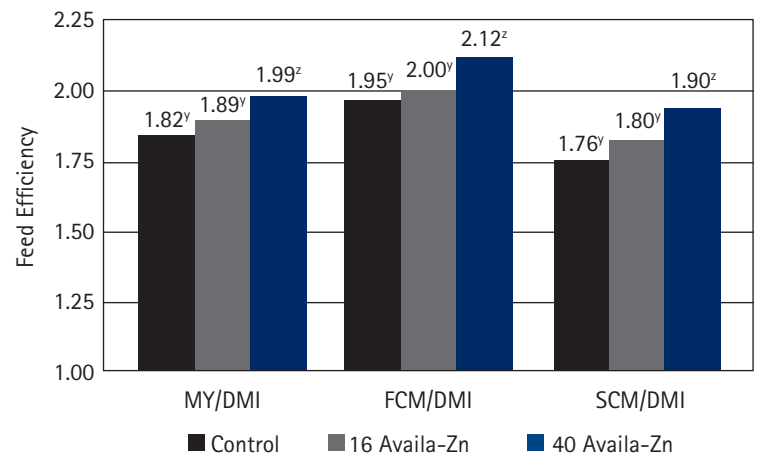
In a university study, replacing zinc sulfate with 16 or 40 ppm Zn from Availa® Zn resulted in decreased SCC and improved feed efficiency. All diets contained 75 ppm Zn and included 51 ppm Mn from MnSO₄, 9 ppm Mn from Availa® Mn manganese amino acid complex, 10 ppm Cu from CuSO₄, 5 ppm Cu from Availa® Cu copper amino acid complex and 1.1 ppm Co from COPRO® cobalt glucoheptonate.

Effect of Supplemental Availa® Zn Levels:
Milk Somatic Cell Count, Linear Score^z



^z Linear P = 0.13
Ref. Slide - DL AZ-84.1
J. Dairy Sci. 97:4392

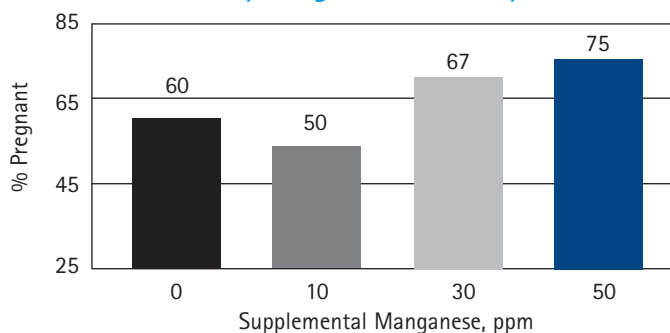
Effect of Supplemental Availa® Zn Levels:
Feed Efficiency



^{y,z} Within a category, LS means lacking a common superscript letter differ, P < 0.01
Ref. Slide - DL AZ-96
J. Dairy Sci. 97:4392

Increased Levels of Manganese

Effect of Dietary Manganese on Fertility of Beef Heifers

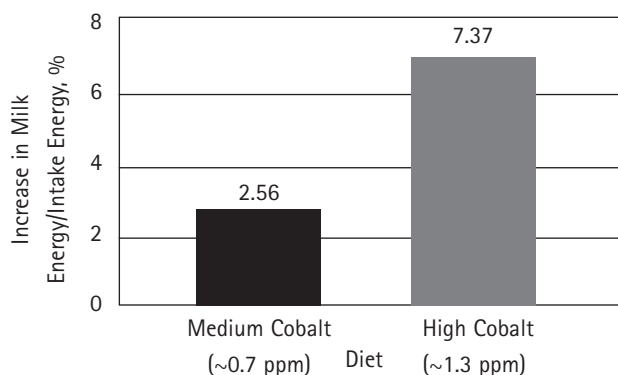


Ref. Slide - DG - 735
J. Anim. Sci. 84:3375

Manganese improves reproduction as it is required for the formation of cholesterol which is essential for the formation of steroids such as estrogen, progesterone and testosterone. Research has shown that increasing the level of manganese supplementation can increase the percent of heifers pregnant.

Increased Levels of Cobalt

Effect of Cobalt on Feed Efficiency: 2 Studies



Ref. Slide - DG-1144
J. Dairy Sci 86:1405
J. Dairy Sci. 90:1880

Cobalt is an essential trace element that is required for vitamin B₁₂ synthesis and fiber digestion in ruminants. Through research, it has been found that feeding dairy cattle higher levels of supplemental cobalt can improve feed efficiency and increase overall milk production.

Optimum Levels of Copper

Availa-Dairy has been formulated to provide optimum levels of copper for cows with high dry matter intakes.

Zinpro Corporation Recommendations for Mature Dairy Cattle

Trace Mineral	Dry or Early Lactation (max total dietary mg/d) Supplemental Mineral, ppm DM	Mid to Late Lactation (max total dietary mg/d) Supplemental Mineral, ppm DM	Typical Value Supplied by Feed ppm DM	Zinpro Performance Minerals® mg/d
Zinc	75 to 85	55 to 65	20 to 30	≥360
Manganese	55 to 75	40 to 55	20 to 30	≥200
Copper Holstein Jersey	8 to 10 (400) 6 to 8 (300)	6 to 8 (400) 6 to 8 (300)	5 to 10 5 to 10	≤125 ≤125
Cobalt	0.8 to 1.2	0.6 to 0.9	< 0.4	25
Iodine	0.9 to 1.1	0.7 to 0.8	< 0.2	25 - EDDI
Iron	0 to 30	0 to 30	200 to 500	0 to 600
Selenium	0.3	0.3	< 0.1	*0 to 4

Ref. Slide - DG - 1616

* Where Legal