



Managing Copper Deficiencies in Wheat

FIELD FACTS

Wolf Trax™ Copper DDP® (57.5% Cu) coats each and every granule in a fertilizer blend to deliver critical copper nutrition to plants where and when they need it most.

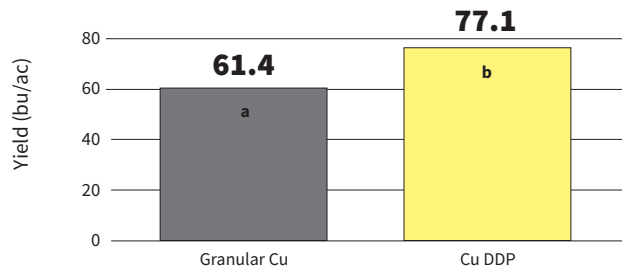
OBJECTIVE

Compare yield and copper uptake efficiencies between Copper DDP and a commodity granular fertilizer on winter wheat.

TRIAL DETAILS

Copper DDP (Cu DDP) was applied as a dry powder to coat a fertilizer blend carrier at 0.4 lb/ac. This treatment was compared to a granular copper oxysulfate (12% Cu) at 16.6 lb/ac. Plant tissue nutrient analysis was performed at 7, 14, and 21 days after emergence. Trial design was a small plot RCBD with 4 replications conducted near Portage la Prairie, MB.

YIELD



Winter wheat yield comparison between copper fertilizer sources. Means with different letters are significantly different ($p < 0.05$).

+\$82
IN GROSS REVENUE/ACRE

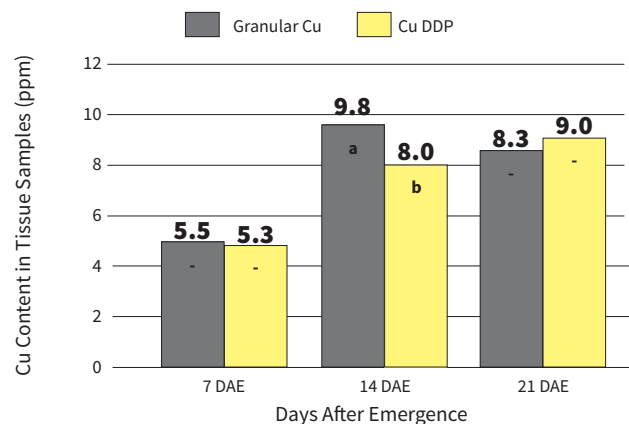
ROI CALCULATOR
= \$5.26/bushel x 15.7 bushels
Source: Argus North American Fertilizer 4/12/2018.

Copper DDP

+15.7 bu/ac

AVERAGE WINTER WHEAT YIELD INCREASE COMPARED TO GRANULAR COPPER FERTILIZER

NUTRIENT UPTAKE



Plant tissue copper uptake data at 7, 14, and 21 days after emergence. Granular Cu received 10 times more copper than the Cu DDP treatment. P-values for 7 DAE, 14 DAE, and 21 DAE were = 0.76, < 0.01, and = 0.44, respectively.

See the reverse for helpful tips on copper management in winter wheat.

For more information visit wolftrax.com

Compass Minerals
Plant Nutrition

COPPER MANAGEMENT TIPS FOR WINTER WHEAT

COPPER DEFICIENCIES CAN BE COSTLY

Cereal crops are particularly susceptible to copper deficiency, and the consequences for not correcting a deficiency can be costly. These include:

- Empty maturing heads (melanosis)
- Reduced tillering
- Poor grain fill
- Increased incidence of diseases such as ergot (fungal disease)

COPPER DEFICIENT RISK AREAS

- High organic matter soils (over 4%) – tie up risk
- High pH soils (over pH 7.5) – a pH increase of 1 unit = 100x reduction in copper availability

DETERMINING COPPER FERTILIZER NEEDS

- Soil testing – studies show a benefit of applying copper fertilizer with soil levels as high as 1 ppm DTPA extractable copper if the crop is managed for high yields
- Keep an eye on yields – yields that are consistently lower than expectations may be copper deficient

COPPER TOXICITY

There is a narrow range between copper deficiency and copper toxicity, which can also devastate crop yields. Wolf Trax Copper DDP features EvenCoat® technology, which allows growers to use rates of copper that are more in line with crop requirements. This minimizes the risk of copper toxicity. Please consult your local extension agent and soil testing laboratory for appropriate copper fertilizer recommendations in your area.



Wolf Trax copper research plots prior to harvest.

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