



Rolla Ag and its producers have been experimenting with copper the last few years with promising results. Some areas and soil types are more susceptible to a copper deficiency than others. Copper deficiencies often appear in patches within a field where the crop appears limp and wilted even when ample water is available however that condition has not been present that last couple years. Deficiency symptoms begin in the youngest part of the plant. Leaves are yellow, often beginning at the tip and resulting in curled or kinked leaf tips known as whip or pig tailing. Stems are weak and often bent at maturity. It is also associated with diseases such as melanosis and ergot. Also, maturity is delayed and the straw becomes dark gray or black.

There are two main ways we were combating the copper deficiencies. The first is a single application of Copper usually 0-0-0-72-12 applied at 5 pounds. The more expensive option of the two, this format gets most of the copper down in one pass. The second is a five-year program usually utilizing a 0-0-0-85-5 blend also applied at 5 pounds. This option applies enough copper for the growing season and begins the stock up process over the five years until we reach the maintenance level. This option is usually preferred as it spreads the cost out over the five-year term.

In this trial the single shot of 0-0-0-72-12 was used. The copper was broadcast over the entire field at a 5-pound rate with a 2-acre plot left unfertilized. As clearly displayed in the photos, we saw a definite result from the copper. The yellow area in the photo is the copper-deficient area that was left out of the application. When we arrived in late June to document the trial, we found the wheat yellowing at the tips toward the base and curling over.

Copper deficiency is more likely to occur in organic (peat) soils or sites of former straw or manure piles where copper is held very strongly by organic matter. Sandy or calcareous soils where total copper supplies are low and sandy or light loam soils with high organic matter content (6-10%) and/or a history of heavy applications of manure are also susceptible to deficiencies. Also in highly leached acid or grey soils copper supply will be low.



*Brandon taking pictures of Trial*



