CHALLENGES, OPPORTUNITIES, AND BEST PRACTICES FOR BIOSOLIDS LAND APPLICATION

CASSIE STRAUSS, UNITED LIQUID WASTE RECYCLING
• Family owned and operated.
• Municipal and industrial waste recycling.
• Contract hauling and land application for WWTP’s.
CHALLENGES....

• Finding “suitable” land that meets all qualifications.
  • More and more land restriction.
    • Slope, depth to groundwater, water holding capacity, water setbacks, etc…

• Producers provide land that is not all approvable acres.
  • Hard to see the benefit when only ¼ of the field is being covered.
MORE CHALLENGES…

• Concern of COVID-19 transmission.
• More counties/towns/jurisdictions are creating rules against land application of biosolids.
• Selling of farmland.
• Undereducation of the public regarding land application.
  • Almost all complaints are due to neighbors not knowing what is going on.
OPPORTUNITIES...

• Non-chemical fertilizer.
• Cost savings of approximately $100 per acre compared to fertilizer.
• Addition of micronutrients that are often deficient in Wisconsin soils.
Deficiency Chart of Micronutrients

**Boron:** Discoloration of leaf buds. Breaking and dropping of buds.

**Sulphur:** Leaves light green. Veins pale green. No spots.

**Manganese:** Leaves pale in color. Veins and venules dark green and reticulated.

**Zinc:** Leaves pale, narrow and short. Veins dark green. Dark spots on leaves and edges.

**Magnesium:** Paleness from leaf edges. No spots. Edges have cup shaped folds. Leaves die and drop in extreme deficiency.

**Phosphorus:** Plant short and dark green. In extreme deficiencies turn brown or black. Bronze colour under the leaf.

**Calcium:** Plant dark green. Tender leaves pale. Drying starts from the tips. Eventually leaf buds die.

**Iron:** Leaves pale. No spots. Major veins green.

**Copper:** Pale pink between the veins. Wilt and drop.

**Molybdenum:** Leaves light green/lemon yellow/orange. Spots on whole leaf except veins. Sticky secretions from under the leaf.

**Potassium:** Small spots on the tips, edges of pale leaves. Spots turn rusty. Folds at tips.

**Nitrogen:** Stunted growth. Extremely pale color. Upright leaves with light green/yellowish. Appears burnt in extreme deficiency.

The colour represented are indicative. They may vary from plant to plant.
OVERALL BIOSOLIDS APPLICATION

• We’re seeing a downward trend in field approvals.
• An upward trend in restrictions of biosolids application within areas.
• Farmer benefit and cost savings.
• Community instruction to cut down on complaints of undereducation.
QUESTIONS???