

Improving Nutrient Use in Corn (Lambton County, 2021)



Improving Grain Development

BioLiNE® Gold improves nutrient transport, assimilation and use in corn plants, which are important factors in supporting photosynthetic reactions that produce sugars (carbohydrates). Foliar applications of BioLiNE® Gold support the ability of crops to ameliorate the negative impact of abiotic stress on grain development, helping to maintain kernel size, shape, and endosperm density, which ultimately support improved yield and 1000 kernel weights.

Late Season Applications to Boost Kernel Weight

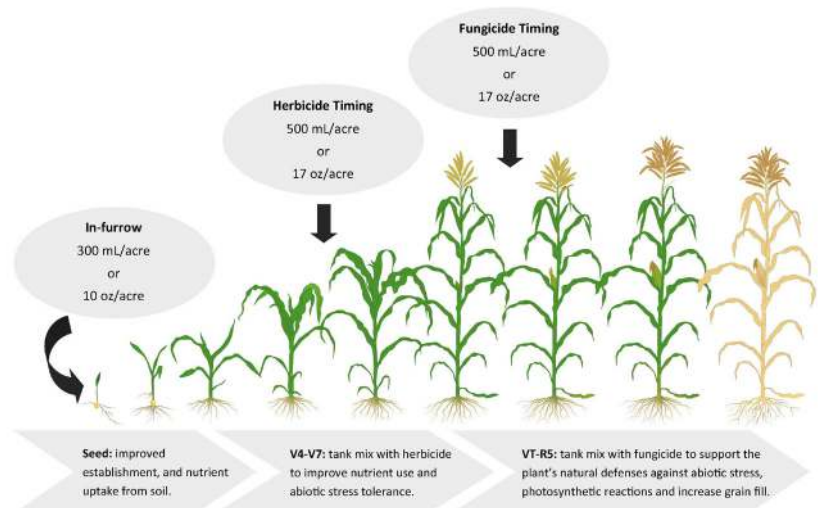
The corn plant is a high-capacity factory for converting large amounts of energy from the sun into carbohydrates, amino acids, oil, and starch found in the corn kernel. During the vegetative growth stages, the plant is growing rapidly and accumulating dry matter. When the plant reaches maturity, the reproduction cycle begins starting with pollination and formation of the starch- and oil-rich seed embryo. The “real fill period” occurs during dent (R5 stage) where more than half of kernel dry weight is deposited. During R5, sugars are transferred into the kernels where they are converted into starch. An osmotic gradient is generated when sugars are taken out of solution (when producing starch) that promotes the movement of more sugars into the kernel to be converted into starch.

BioLiNE® Gold drastically improves the transport and assimilation of nutrients and other plant beneficial compounds. Combining superior cell permeability, bioactive chemistry, and accelerated nutrient exchange is our advantage.

Our Fulv-IQ™ process isolates targeted fractions of fulvic acids, producing a superior product for maximizing the yield potential of your crops. The molecular size and chemistry of humic substances impact their field performance. Our scientists are leveraging the knowledge gained through decades of research to purify and activate fulvic molecules with the most crop beneficial properties.

Our products have been shown to consistently improve nutrient use efficiency in crops ensuring growers get the most out of their fertility applications. Our technology is an easy-to-use and affordable tool to mitigate abiotic stress in crops. Optimized and formulated with a key focus on science and plant chemistry, BioLiNE® products are rigorously tested in controlled environment chambers as well as field trials on various crops and in varying conditions. With low usage rate requirements, our versatile solutions can be added to starter and foliar fertilizers, tank-mixed with herbicides or fungicides, impregnated onto dry fertilizers, or applied as an ingredient in seed treatment.

Application Timing and Rates of BioLiNE® Gold



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3971 Old Walnut Rd
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Replicated Field Trial Results



This trial consisted of six replicated plots per treatment. Plot blocks were randomized. The field trial took place during the 2021 growing season in Lambton County, Ontario. There were no additional fertilizers applied to the field for this season.



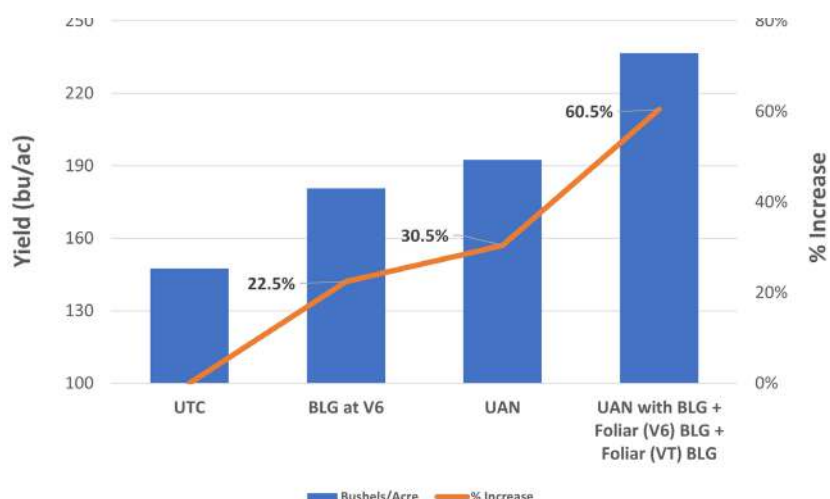
Treatments

1. UTC – Untreated check with no fertility applications prior or during season.
2. UAN side dressed (20 gal/acre).
3. BioLiNE® Gold at V6 with no fertility application prior or during season.
4. UAN (20 gal/acre) with BioLiNE® Gold (350mL/acre) side dressed, plus two foliar applications of BioLiNE® Gold at V6 and VT (500mL/acre).

Results

Corn treated with BioLiNE® Gold at V6 showed a 22.5% increase in overall yield (181 bu/ac) compared to the control (148 bu/ac) and was close to the yield when UAN was applied (192 bu/ac) highlighting the ability of BioLiNE® Gold to reduce fertilizer use and maintain yield.

Corn treated with UAN and BioLiNE® Gold in both side dress and foliar applications showed a 60.5% increase in overall yield (237 bu/ac) compared to the control (148 bu/ac), and a 23.4% increase over applying UAN only (192 bu/ac). Cobs were more uniform in size compared to either of the other treatments.



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