Soysoap And How It Increases Leaf Chlorophyll

Chlorophyll is the molecule that absorbs sunlight and uses its energy to synthesise carbohydrates from CO2 and water. This process is known as photosynthesis and is the basis for sustaining the life processes of all plants. Since animals and humans obtain their food supply by eating plants, photosynthesis can be said to be the source of our life.

Photosynthesis

"Nature has put itself the problem of how to catch in flight light streaming to the Earth and to store the most elusive of all powers in rigid form. The plants take in one form of power, light; and produce another power, chemical difference." The actual chemical equation which takes place is the reaction between carbon dioxide and water, catalysed by sunlight, to produce glucose and a waste product, oxygen. The glucose sugar is either directly used as an energy source by the plant for metabolism or growth, or is polymerised to form starch, so it can be stored until needed. The waste oxygen is excreted into the atmosphere, where it is made use of by plants and animals for respiration.

Including Soysoap in foliar nutrient sprays on drought-stressed soybeans dramatically upsets an old paradigm: That foliar feeding is futile on crops under stress. Instead, this demonstration indicates that Soysoap is indeed the "missing link" in helping crops absorb and metabolize essential nutrients which they're not able to extract from the soil.

On Sept. 1, we sampled multiple leaf chlorophyll readings on the soybean strips where we foliar-fed stressed soybeans with nutrients mobilized with Soysoap, and also where we had left untreated controls.

Taking several 10-location readings with the Minolta chlorophyll meter:

Treated soybean leaves averaged a reading of 51.9.

Untreated leaves averaged a relative chlorophyll reading of 33.2.

Picked 70 pods from the center of each strip (treated / control) along 200 feet of row.

The 70 pods from the treated rows weighed 95 grams.

The 70 pods from the untreated rows weighed a total of 69 grams.

The strips which we have foliar-fed three and four times are remaining a rich green and they are filling pods. What this indicates to us is that soybeans can be “nursed” with highly mobilized nutrients despite a lack of rain. This field has had a half-inch of rain in

July and another half-inch in August. A highly respected handbook on foliar feeding, published by Midwest Laboratories, says "Crops under heat or moisture stress show less response to foliar applications due to lower leaf and stem absorption rates and/or poor vigor."

Including Soysoap in the tank mix helps overcome poor absorption and translocation. Thus, you can provide nutrients effectively when crops are suffering, by mobilizing the foliar blend with Soysoap.

Our foliar-fed soybean rows are thus unusually dark green for this point in the season. Most other soybeans all around us are rapidly yellowing because of the drought, as of Sept. 1.

Not far from us on an experimental farm, a data logging weather station recorded 2.05 inch of rain in June, 0.85 inch of rain in July and 0.8 in August.

The first photo shows typical chlorophyll reading on the treated soybeans, which are hip-high and full of pods. A reading around 50 indicates good leaf nitrogen and an abundance of chlorophyll, which are the plant's sugar-making engines. The meter is more objective and discerning than a visual look at the crop.

The second photo shows a reading from a green leaf typical of the untreated rows. In the untreated beans, we did not take readings from yellowed leaves — just those with typical green.

In another comparison, we compared sugar levels in treated and untreated pods. Since the pods were so dry, we couldn't squeeze plant sap directly from the pods, so we added a cup of water to each sample of 70 pods, whizzed up the water and pod mixture in our "NutriBullet" blender, and checked the brix level of the dilution. The diluted control pod solution read a brix level of 3.6 and the Soysoap / nutrient treated beans read a brix level of 6. The dilution was about 3 parts water by weight, one part pods. We used an equal weight of pods in both samples.

The leaves in untreated strips were yellowing from drought and nutrient deficiency as of Sept. 1, which is early for beans to be “turning” with normal maturity. If you were to read any of the yellowing leaves, the meter reading would drop to nearly zero. This meter’s relative scale reads from a negative 10 to positive 200. A cornfield with dark green color would read between 40 and 50. (We’re sprouting some new corn in greenhouse tests; the bright green leaves show readings around 47.)

We’ve used Soysoap to mobilize several forms of nutrients on these test strips, simply to see what can be done. The nutrients include Kugler’s 20-0-7.5, Dramm fish emulsion, liquid humates, sugar, International Ag Labs Way Ahead 7X, and a specially formulated trace element blend from DiHoMa Chemical in Mullins, SC. Also, a little urea was blended into the tank mix. And we had some micronized rock powder. We’ve taken to call such an array of nutrient blends as the “Schlapkohl treatment” after Keith Schlapkohl, who often uses a wide array of products in his foliar blends, including Soysoap. And also like Keith, our tank mix water is structured by a Pursanova system. Unlike Keith, it’s not reverse osmosis, however. We do ozonate our water, though.

Total materials cost of all these treatments would be about $35, including $15 for Soysoap at retail prices. We used Soysoap at 4 to 5 ounces per acre. Today, that late-

season expense amounts to a couple of bushels of beans. Hiring the spraying would be about $15 more.

If we get another shower in the next few days, we may hit two or three of the strips again, just to go for more pod fill. The weigh wagon will eventually write the final chapter, along with test weight and moisture readings. We should probably take some brix readings of the beans and a few tissue tests too. Earlier, leaves in this field showed a severe potassium deficiency.

These nutrient sources tank-mixed easily when the water was made a stronger solvent with Soysoap. Of course, Soysoap's surfactant power helped every spray flow smoothly onto the leaf, without droplets.

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