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Trials Report: Sweet Corn – J&B Farms, Frio Texas **Reported by Mr. Dave Shimp and Mr. Clyde Veltmann**

AgReviveSM, LLC 

J&B Farms in Frio Town, Texas, is a very large grower of sweet corn, green beans, broccoli, southern greens, cabbages and winter wheat for some of the largest food chain stores in the US. Mr. David Jones, J&B Farms' owner, initiated a trial of sweet corn beginning in April, 2015. The trial was supervised by Mr. Mike McHugh, agronomist for J&B Farms.

Trial Summary

The corn was planted on April 6, 2015 and both the **MicroSoil**[®] trial area and the neighboring control area planted on the same day were harvested on June 9, 2015. Adjoining corn planted a week earlier (a second control area) was harvested on June 5. Comparisons through the trial were made with both control areas. Key observations are as follows:

- Because of excessive rain and flooding (more than two times normal precipitation in Spring of 2015) the results are not be considered “normal” because the impact of **MicroSoil**[®] and both controls were likely reduced somewhat by excess water. Notwithstanding this concern, **MicroSoil**[®] materially improved results.
- The **MicroSoil**[®] trial area grew more quickly, “caught up” and then matured more quickly than the control area planted a week earlier.
- The **MicroSoil**[®] trial area also grew more quickly and produced stronger plants than the control area planted the same day in terms of:
 - ◇ growing higher
 - ◇ tasseling sooner and more robustly
 - ◇ producing larger and more numerous ears
 - ◇ creating a more robust root structure with significantly more root hairs, a sign of healthier soil
- The **MicroSoil**[®] treated area produced 390 48-ear boxes of sweet corn compared to 356 boxes from the trial area, a yield increase of 9.6%.
- The BRIX for the **MicroSoil**[®] treated corn was 14.8 compared to 14.0 for the control, a sign of a more nutritious crop.

Trial Details

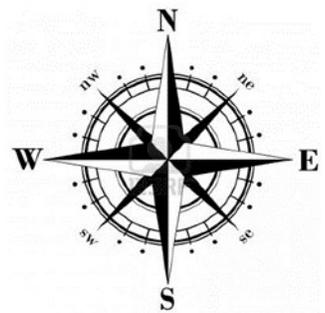
The sweet corn was planted on April 6 using a “pop up planter”, a process where the seed is injected along with nitrogen and fungicides at the rate of 5 gallons per acre. As a result of late receipt of soil test results and inability to develop a timely protocol that used the pop up process, the corn was planted without **MicroSoil®** in the “pop up”.

The soil test indicated deficiencies of copper, iron and zinc which were added along with **MicroSoil®** through a sprayer a few days after the pop up seed planting took place. As the trials were being developed and implemented, an excessive amount of rain fell on the general area and across Texas. The area received 34 inches of rain along with hail and tornadoes locally in the first five (5) months of 2015 compared to an annual average of 30 inches of rain. Over 12 people were killed by flooding within 150 miles of Frio Town. As a result the fields were flooded and roads were at times impassible, barricaded or closed.

Despite the problems, 36 rows of sweet corn running east to west were treated per the protocol and became the “trial area” in the midst of two “controls”. The Southern Control area was planted about one (1) week before the **MicroSoil®** trial area, and the Northern Control area was planted at the same time as the **MicroSoil®** trial area.

The chart below shows the location of the trial and control areas. All the pictures were taken from the eastern edge of the field looking west.

Northern Control Area – Planted April 6, 2015
36-Row MicroSoil® Trial Area – Planted April 6, 2015
Southern Control Area – Planted about one (1) week before April 6, 2015





The photo above, taken April 4 shows the **MicroSoil®** trial area on the left and the Northern control area planted at the same time April 6 on the right. On the far left is the corn planted about one week earlier (Southern control area). Note the larger size of the **MicroSoil®** trial area on the left and the Northern control area on the right. But the Southern control area on the very far left is clearly larger at this time.



The photo above, taken May 2, shows the **MicroSoil®** trial area on the left and the Northern control area planted at the same time April 6 on the right. On the far left is the corn planted about one week earlier than April 6 (Southern control area). Note the larger size of the **MicroSoil®** trial area on the left and the Northern control area on the right. But the Southern control area on the very far left is clearly a bit larger as of May 2. All the corn stalks are bent over from very strong winds sweeping the area.



The photo above (left) was taken on May 20 – the photo above (right) is the same view on June 3. The Southern control area planted one week before the **MicroSoil®** trial area is on the left. The **MicroSoil®** trial area is on the right. By May 20 the **MicroSoil®** trial growth has caught up with the Southern control area planted a couple weeks earlier; by June 3 it was more mature.



The photo above (left) was taken May 20 – the photo above (right) of the same view was June 3. Both compare the **MicroSoil®** trial area on the left with the control area planted the same day to the north on the right. Note as of May 20 the robust tasseling and the broader leaf structure on the **MicroSoil®** trial area corn. Also note the well-formed ears on the **MicroSoil®** corn in both pictures.

Harvesting the Sweet Corn

Yields for sweet corn are measured based on the number of 48-ear boxes harvested per acre. Normal mechanical harvesting methods would not give accurate yield results for the relatively small trial area. To ensure accurate yield measurements, both the trial and the control areas were mechanically topped as they normally would be and then handpicked per the photos below. Workers are paid at the end of the day based on the number of boxes picked. **Yields on the MicroSoil® treated corn were 390 boxes per acre compared to 356 boxes from the control area, a 9.6% yield increase. The incremental revenue from the extra 34 boxes after picking and packing costs is approximately \$3.00 per box or \$102 per acre.**



The photo above (left) taken May 20, shows very well developed first and second ears within the **MicroSoil®** trial area – large amounts of corn silk and very robust. The photo above (right), also taken on May 20, shows the ears formed on the right-hand side Northern control area – the ears are very small and/or not yet tasseled/fertilized.

The 3 photos below were taken on the same day, June 3, 2015.

The Northern control area ears of corn planted same day are in the photo (right).



The MicroSoil® ears are in the middle photo (left). Note the **MicroSoil®** ears are fatter and larger than both of the two control areas, even though they are a week older.

The **Southern control** area ears of corn planted a week earlier are in the photo (right).





In the 4 photos above, **the MicroSoil® treated corn is on the left**. Note the thicker root structure and the larger number of root hairs on the **MicroSoil®** treated corn which are caused by the healthier soil and healthier plants that result from **MicroSoil®**.

Two BRIX measurements were taken on each of four ears of **MicroSoil®** corn and each of four ears of the control corn. The **MicroSoil®** treated corn averaged 14.8 BRIX and the control averaged 14.0 BRIX. The grower indicated that BRIX in corn is not viewed as that important and buyers will pay no attention to it. Corn is typically sold as a loss leader to stimulate the sale of meats for summer grilling and, as a result, price is more important than nutrition.

It is believed that these results are by definition somewhat atypical and **MicroSoil®** performance was somewhat reduced due to the large amounts of rain and flooding experienced by the fields in this particular season.