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**AgRevive<sup>SM</sup>, LLC** 

## Trial Report: Green Beans – J&B Farms, Frio Town, Texas

Reported by Mr. Dave Shimp and Mr. Clyde Veltmann

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 USA. Mr. David Jones, J&B's owner, initiated a trial of green beans beginning in late August, 2015. The trial was supervised by Mr. Mike McHugh, J&B's agronomist.

### Trial Summary

Despite this crop of green beans being planted, grown and harvested under extreme conditions that were much less than ideal, the plant quality and yields were outstanding.

Immediately after the crop was planted on August 25, 2015 in Pivot Number 6's irrigated field, it was subjected to very high temperatures in excess of 100°F, exceptionally dry conditions and an irrigation well failure. This almost resulted in the total loss of the crop and having it "plowed under" within three weeks after it was planted. However, based on previous success using our written protocols with **MicroSoil®**, Mr. Jones and Mr. McHugh had opted to purchase enough **MicroSoil®** to treat the entire pivot. Knowing we typically accelerate growth rates and improve plant health, they decided to give the **MicroSoil®** a week or two to work once the irrigation problem was repaired. The beans fully recovered and the final crop exceeded all expectations:

- Compared to previous green bean crops in the same area, the **MicroSoil®** crop grew more quickly and produced stronger plants.
  - The plants were higher, fuller and heavy with beans.
  - The root structure was more robust with significantly more root hairs and a higher number of nitrogen nodules for Rhizobia nitrogen-fixing bacteria, a clear sign of healthier soil and plants.
  - There was more residual plant material recycled to the field to build organic matter and sustainable soil health for subsequent crops.
- However heavy rains from the Gulf region in mid-October immediately followed by the remnants of a hurricane that came up from Mexico caused extensively wet fields and delayed the harvest.
- The plants were so heavy with beans that some of the plants heaviest with beans bent dropping some of the beans to the ground. This made the crop difficult to machine harvest, lowered the yield and subjected parts of the crop to field rat damage.
- **Despite all these problems, the MicroSoil® treated crop produced 342 crates of beans per acre compared to normal yields of 250 crates, a yield increase of 37%.**
- **The grower reaction was very enthusiastic. Based on the results of this trial and other trials on other crops at the same location, Mr. Jones and Mr. McHugh have indicated that they are going to use our protocols and MicroSoil® on their entire 18,800 acre operation beginning immediately in November 2015.**

## Trial Details



Immediately after the crop was planted on August 25, 2015 in Pivot Number 6's irrigated field, it was subjected to very high temperatures in excess of 100°F, exceptionally dry conditions and an irrigation well failure. This almost resulted in the total loss of the crop and having it "plowed under" within three weeks after it was planted. As of **September 9** the crop was barely above ground and did not look very healthy. (Photos above)



But by **September 23**, with the help of **MicroSoil®** the crop was looking much better and the decision was made to continue the crop to harvest. (Photos above)



**By October 8**, the crop had unquestionably returned to health. Plans were made to harvest the crop on or about just after the middle of October. (Photos above)



Almost immediately a low tropical depression in the Gulf caused rain to fall continuously and it continued as the remnants of Hurricane Patricia worked its way across northeasterly into south Texas. **By October 28** the crop had still not been harvested, was incredibly robust and the fields were dry enough to allow the harvest to begin. The harvest was to begin on October 29. (Photos above)



As of the day of the harvest, October 29, the plants were heavy with beans as shown in the photo above left. Some of the plants were so heavy and weakened by ongoing wind and rain that they allowed the beans to drop to the ground where they were difficult to machine harvest and subject to being eaten by field rats, as shown in the photo above right.



The root systems, however, exhibited the typical massive root structures routinely associated with all plants grown with **MicroSoil®**. Also, green beans naturally involve Rhizobia, which are soil bacteria that fix nitrogen after becoming established inside the root nodules of beans, peanuts, alfalfa and other legumes. The photos above show the unusually large number of root hairs and nitrogen-fixing root nodules (Rhizobia bacteria) on the green bean plants, which too, is common whenever **MicroSoil®** is being used. (Photos above)

## *Harvesting the Green Beans*

Machine harvesting began on October 29, 2015. The photo on the upper left shows a view looking forward from the hopper of the harvesting machine. The lower left photo looks out back of the harvest machine over the dump gate. Note the thick layer of residual material left in the field after the harvest behind the dump gate. The large, healthy plants and the robust root structure produced more than the normal amount of residual plant material that was recycled into the field to build organic matter and sustainable soil health for subsequent crops. The upper right photo shows dumping of the harvest machine into the transport trailer.

**The overall yield from the field was 342 crates per acre, a 37% increase of over the 250 crates per acre that is normal.** All this was accomplished with the help of **MicroSoil®** despite the challenges presented by atypical weather. Late the night of the harvest, the rains came in again stopping the harvest, flooding the roads and the fields, and stranding some of the equipment in the mud as shown in the lower right photo taken the next day, October 30.

