

## The GreenSafe™ System

Introduction - Hemp Cultivation



**Green-Safe-Solutions:** We are an innovative company ending its first decade dedicated to wider application of centuries old sustainable agriculture system turbocharged by nanotechnology. We convert proven processed plant and oil seed extracts into colloidal micelles using our proprietary blending process. Trillions of these colloidal micelles

are combined to form the nanomaterials that make up the GreenSafe™ System. They restore soil fertility and conserve nutrients by reducing or replacing harsh and hazardous synthetic chemicals. Our 100% biodegradable, toxin free products help breaks the cycle of soil, crop, work area, home, and environment contamination.

**The Agricultural Shift:** The industrial chemicals agriculture model puts products at risk of failing state 'Green Rush' standards for sale and addition to food and candy.

Our biological agricultural model increases yield and quality while cutting costs. The essential oils and plant extracts approach reduces or eliminates harmful residuals, handling hazards, destruction of useful birds, insects and soil bacteria and damage to the environment. All of this while application of nanotechnology to form colloidal micelles to exceed industrial chemicals cost performance.

**The GreenSafe™ System:** Our products work seamlessly alongside all growing pest control and hygienic cleaning strategies. The following pages report a plant scientist study and grower success stories demonstrating the system's value for growing and cleaning.

- + Hemp Cultivation Study Report
- + Grower Testimonials
- + Grower Success Story

### CO Tightens Quality Assurance

Colorado allows CBD and other hemp extracts to go in foods and drinks. By Oct. 1, the state's health department will require hemp products certified by licensed labs certified not to contain any of 106 pesticides, heavy metals and mycotoxins. Failed inspection can result in product destruction and cultivation sites requiring cleaning and passed inspection to operate. New York and California plan similar regulations in the same time frame.



## The GreenSafe™ System

### Hemp Cultivation Study Report

A GreenSafe™ System value investigation was designed and conducted by Plant Scientist, Chris Becker, PhD Cornell University, and his team at BAAR Scientific LLC. (<https://www.facebook.com/BAARScientificLLC>) The following pages provide data from three controlled, outdoor hemp nutrient enhancers evaluations completed during the 2019 New York outdoor season:

1. CBDA – Biomass Yield and Quality Evaluation
2. Seed Evaluation
3. Industrial Fiber Hemp Evaluation

#### **Evaluation Summary:**

Fertilizer was applied to all plots using hand applicators, so that plots could be established with no fertilizer. Fertilizer was applied just prior to planting hemp seeds at 75 lbs./acre as N using 19-19-19 (NPK blend).

Soil Program: Plant Amendment was applied to the soil immediately prior to seeding the field. The soil applied treatment was applied using a CO2 backpack sprayer, which was calibrated to deliver 40 GPA using 42 PSI and 4 flat fan nozzles (TeeJet 8003). Plant Amendment was applied at 1 fl oz in 4 gallons of water. - Plant Amendment (Outdoor) concentrate in 20-gallons of water applied at 5-oz. per acre rate.

Plant Program: A spray solution of 15 mls per gallon of water was applied at roughly 2-week intervals, beginning when hemp plants were about 3 inches tall. Foliar application was applied using a CO2 backpack sprayer that was calibrated to deliver 40 Gallons per Acre, with delivery of treatments through Hollow cone nozzles (TeeJet TXVS18). Spray boom was held at 18 inches above the canopy.

Weed Pressure during the season consisted of Common ragweed and Common Lambsquarters at about 0.1 per sq ft. Weeds did not appear to impact hemp establishment or growth.

Harvest: Plants were harvested from each plot and individual plants were measured for plant height. Plants tops and roots were separated, so that top and root portions could be weighed.

#### **Executive Summary**

The objective was performance comparisons between the all-natural biostimulants and the use of fertilizer alone. The details are the subject of the following pages of this section. The professors finding was **Plant Amendment and Foliar Spray applications bring substantial improvements:**

- ⊕ CBD Level +22.8%
- ⊕ Biomass +58.4%
- ⊕ Fiber Yield +47.2%
- ⊕ Seeds +9%

## HEMP TRIAL

CBD - Biomass Yield and Quality

Phelps, NY

Trial conducted by BAAR Scientific LLC

Research Scientist, Chris Becker, PhD Cornell University

<https://www.facebook.com/BAARScientificLLC>

Hemp seeds were started in greenhouse soilless media on June 4. The hemp cultivar “Cherry Blossom” was used. After hemp plants were about 4 inches tall they were transplanted into 4 inch pots and maintained in the greenhouse until Plants were transplanted in the field on Aug 12. Hemp plants were transplanted into a sandy loam soil that had been disked twice. The soil was fertilized with 19-19-19 (NPK fertilizer) at the rate of 75lbs N (active) per acre prior to last disking. Hemp transplants were planted in rows 10 feet apart and 5 ft apart within the row. Individual plants were staked to 6 ft tall bamboo stakes. Moonshine Plant Amendment treatments was applied to the soil prior to last disking.

Plants were watered as needed, and hand weeded..

Application of Moonshine foliar was applied Aug 12 & 26 and Sept 14. Foliar application was applied using a CO2 backpack sprayer that was calibrated to deliver 40 Gallons per Acre, with delivery of treatments through Hollow cone nozzles (TeeJet TXVS18). Spray boom was held at 18 inches above the canopy.

Plant heights were recorded at planting, and again at harvest on October 14, 2019. At harvest on October 14 entire plants were removed from the plots, and the soil was removed from the roots. Roots were separated from the shoots at the soil line, and the individual shoots and roots were weighted. The top 2 inches of each plant was removed and dried within a plant dryer to approximately 10% moisture. The dried top tissues were assayed for CBD and THC levels.

Table 1 - Hemp CBD Quality and Yield Test

Treatment	Plant Ht Increase Since Transplantin	Plant % Increase in Ht. Since Planting	Plant Weight at Harvest Oct. 14	Plant Weight at Harvest Oct. 14	Plant Shoot to Root Ratio Oct. 14	CBDA Levels	Biomass
Fertilizer only	10.79 a	1.68 b	290.19 a	37.09 a	11.07 a	9.15	49.90
PA + FS	12.13 a	1.73 b	458.38 a	69.45 a	7.28 a	11.24	79.02
LSD p = 0.10	4.504	0.278	182.759	27.946	4.593		
Std Deviation	3.673	0.227	149.049	22.791	3.746		

**122.8%**      **158.4%**

Notes: Plant Amendment - Applied at 5-oz. per 20-gal. water.

Foliar Spray - Applied at 15-ml. per gal. water

Biostimulants -THCA = 0.05 / 0.36%

Fertilizer Only - THCA = 0.09 / 0.27%

CBD plants have acceptable Levels of THC (Delta 9 now has to be below 0.3. But The new proposed rule would be total THCA should be below 0.3 - however up to 0.39 will considered 0.3 by regulators.

Means followed by same letter or symbol do not significantly differ (P=.10, Student-Newman-Keuls).

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

## HEMP TRIAL

Industrial Fiber Hemp

Phelps, NY; 2019

Trial conducted by BAAR Scientific LLC

Research Scientist, Chris Becker, PhD Cornell University, Plant Pathology, 1993

<https://www.facebook.com/BAARScientificLLC>

1 Acre	Phelps, NY
10-Jul-19	Planted
19-Sep-19	Pulled
Term	9-Weeks 5-Days
Fertilizer	19-6-19 75 lbs Nitrogen by Ground
Plots	Four
Plot 1	No Fertilizer
Plot 2	Fertilizer Only
Plot 3	Plant Amendment 5-oz./20-gal. - Fertilizer
Plot 4	Foliar Spray - 15-ml/gal. Plant Amendment 5-oz./20-gal. - Fertilizer

Table 2 - Hemp Seed Trial

Test Plot	Length-in.	Root Wt-gm	Top Wt-gm	Test Plot	Root to Shoot Ratio	
1	34.83	3.07	30.91	1	10.07	No Fertilizer
2	35.47	4.11	38.75	2	12.62	Fertilizer Only
3	42.39	5.73	51.54	3	16.79	PA 5-oz./20-gal. - Fertilizer
4	42.38	6.15	57.04	4	18.58	FS - 15-ml/gal. PA 5-oz./20-gal. - Fertilizer

Plants with a higher proportion of roots can compete more effectively for soil nutrients, while those with a higher proportion of shoots can collect more light energy.

Root systems play a fundamental role in taking up nutrients and water as the absorption at the root level is more intense so the biomass is greater.

Greater root/shoot ratio means greater root density for increased root activity and

# HEMP TRIAL

Seed Evaluation

Phelps, NY

Trial conducted by BAAR Scientific LLC

Research Scientist, Chris Becker, PhD Cornell University

<https://www.facebook.com/BAARScientificLLC>

Hemp seeds (CV 'Felina 32) were planted July 12 2019 in Phelps, NY.

80000 seeds per acre were planted using a Great Plains No-Til Drill.

Plots were established that were 7.5 Ft wide and 30 ft long.

Each treatment consisted of four replicate plots using randomized complete blocks.

Fertilizer was applied to all plots using hand applicators, so that plots could be established with no fertilizer. Fertilizer was applied just prior to planting hemp seeds at 75 lbs ai of N using 19-19-19 (NPK blend).

Plant Amendment was applied to the soil prior to seeding the field. The soil applied treatment was applied using a CO2 backpack sprayer, which was calibrated to deliver 40 GPA using 42PSI and 4 flat fan nozzles (TeeJet 8003).

The first rainfall after planting occurred on July 16/17 and was measured at 0.29 inches.

No herbicides were used as plots were established in a site that had been in soybeans where glyphosate had been applied during the previous 3 years.

**Weed pressure** during the season consisted of Common ragweed and Common Lambsquarters at about 0.1 per sq ft. Weeds did not appear to impact hemp establishment or growth.

**Application - Foliar Spray** was applied at roughly 2 week intervals beginning when hemp plants were about 3 inches tall. Applications were made on July 27, Aug 4 & 18 and Sept 4. Foliar application was applied using a CO2 backpack sprayer that was calibrated to deliver 40 Gallons per Acre, with delivery of treatments through Hollow cone nozzles (TeeJet TXVS18). Spray boom was held at 18 inches above the canopy.

**Harvest** - On Aug 22, 20 plants were harvested from each plot and individual plants were measured for plant height. Plants tops and roots were separated, so that top and root portions could be weighed.

On Sept 15, 50 plants per plot were harvested. Total plant weight was collected, thus weight per plant could be determined. Seeds were separated from plants using a portable gas powered Thresher and seed weight per plant was determined.

Table 3 - Hemp Seed Trial

Treatment	Plant Ht (in.)	Plant Wt (gm)	Root Wt (gm)	Wt./Plant	Seeds (grams)
No Fertilizer	34.83b	31.02a	2.58a	29.62b	4.29a
Fertilizer only	35.47b	38.76a	3.46a	33.26b	5.09a
PA	42.39a	51.48a	4.79a	50.29ab	5.16a
FS	42.38a	57.05a	5.20a	55.81ab	5.62a

Grams increase compared to fertilizer only: 0.46

Seed Percent Increase: 9.04%

Notes: PA (Plant Amendment0 - Applied at 5-oz. per 20-gal. water.

FS (Foliar Spray) - Applied at 15-ml. per gal. water

Means followed by same letter or symbol do not significantly differ. Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

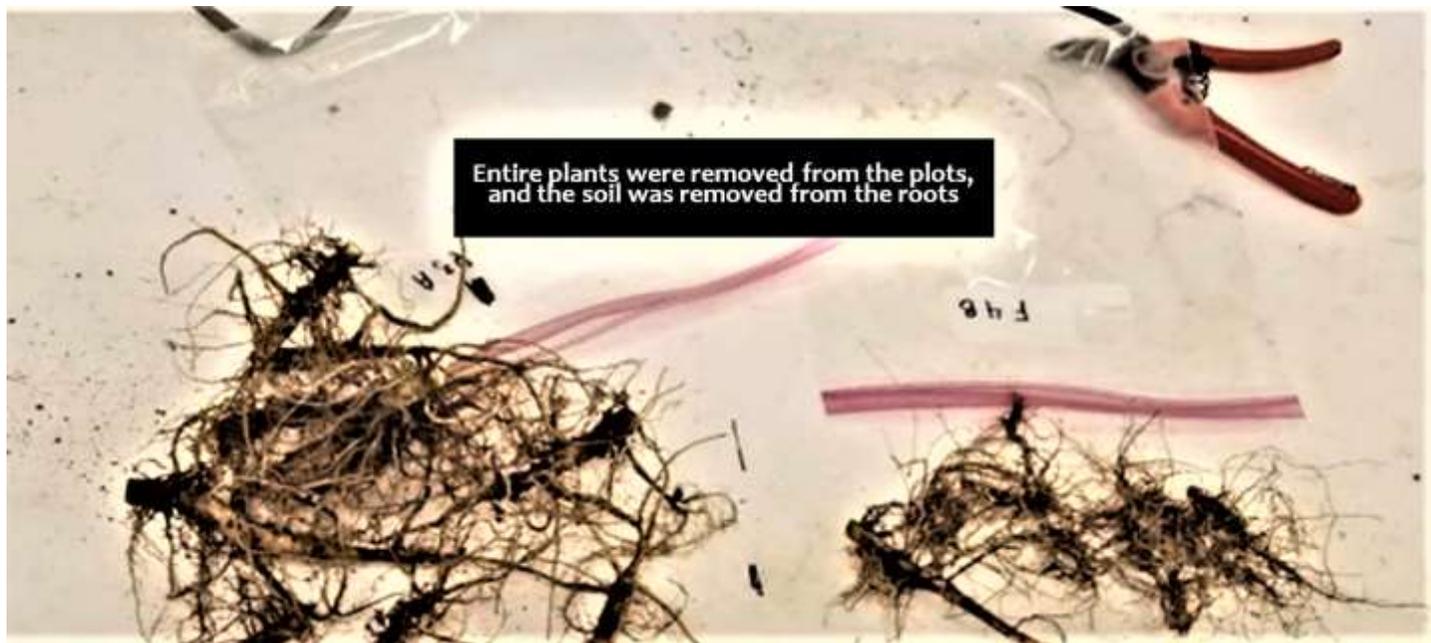
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- ❶ Treated – Untreated Hemp
- ❷ Treated – Untreated Roots
- ❸ Professor Baker Harvesting Plants for Measurements
- ❹ Treated Plant Shoots – Fertilizer Only Shoot
- ❺ Plants Ready to Harvest
- ❻ Flowers Ready to Harvest
- ❼ Treated Plant Roots – Fertilizer Only Roots (Next Page)
- ❽ Treated Plant Roots – Fertilizer Only Roots (Next Page)

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### 7 Treated Plant Roots – Fertilizer Only Roots



### 8 Treated Plant Roots – Fertilizer Only Roots



## HEMP GROWER REPORTS

**Oilseed Hemp** (Indoor – Outdoor Grower) Gary P. our Minnesota grower manages a multifaceted agricultural enterprise started by his family in 1901. He knows Plant Amendment and Foliar Spray applications bring him 30% higher yields for his corn and +20% for peppers. He is in his early years cultivating hemp but already knows Plant Amendment and Foliar Spray are keys to success for that crop too. He reports he is seen no signs of greenhouse pests since beginning use of Plant Amendment in his irrigation water. He begins his hemp growing cycle with cuttings from successful strains. He reports Plant Amendment reduces the time until these cuttings are ready for potting from four to three weeks. This is important because it takes him 20-days in the greenhouse to have seedlings ready for transplanting. He says the efficiency of this greenhouse phase is what will decide how many of his allocated 80 acres he will be able plant with hemp this season 2019. Once planted, he knows applications of Foliar Spray at 5 oz. per acre were key to his healthy 2018 outdoor plants. He is operating a newly purchased extraction system and the CBD quality looks good, test results are clean and has 40 liters ready to sell.

**Oilseed Hemp:** (Outdoor) Nevada hemp grower, Tom M., Nv. reports great results once he decided to apply Foliar Spray. His plants were stressed by unusually high summer temperatures. They had yellowed. Some appeared to be dying. Tom started plant amendment and Foliar Spray application on all his plants. During his first application he took care to spray all parts of each plant including the stems and the soil to soak the roots. Two weeks into his weekly sprays Tom said, “New growth way exceeded the height of the original plant where there was no growth before. Even the yellowish parts of the plants had gone to flower. Some plants never took off during the two months since planting but are coming to life after starting foliar spray application. Hope is renewed for a pound of Hemp from each plant.”

**Hemp** (Outdoor) New York farm owners decided to give GreenSafe™ products a try. The photo above shows the condition of their outdoor hemp grow plants doing badly. They applied Plant Amendment following by two applications of Foliar Spray a few days apart. A week plus later the one owner got a phone call from the other. He said, “You gotta get over here and look. You cannot believe what happened to these plants. it is saved the 10 acres from plow’n it under. They are Emerald green!

**Processing Hemp:** Jason: “The All-Natural Cleaner works great cleaning trimming machines and hand tools. It works with water instead of rubbing alcohol. This solves the shortage of alcohols because of hand sanitizer demand.”

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**Rockland County Hemp Case**  
Before Photo (Left) Foliar Spray (Outdoor)  
applied twice, 10-days apart



**Outdoor Cannabis Grow - GreenSafe First Time User**

A co-owner said to the other owner, "You gotta get over here and look. You can't believe what happened to these plants. it's saved the 10 acres from plow'n it under. They're Emerald green and growing like crazy. Absolutely gorgeous in clay soil."