



AGRICULTURAL APPLICATIONS

Protein Surfactant Complexes (PSCs)

- Protein Surfactant complexes aid greater wetting of soils and enhanced moisture retention with less use of surfactants diminishing use of adjuctants
- Reduces Interfacial Tension and surface tension of Surfactants for improved wetting including foliar and soil applications
- They enhance young crop “plugs” strengthening roots and delaying shoot growth





Protein Surfactant Complexes (PSCs) + Proprietary Mixture

Surfactant	CMC, ppm	
	Without FGX3	With FGX3
Lauramine Oxide	99.78	13.03
Na Lauryl Ether Sulfate	642.6	115.2
1:2 LO – SLES	146.1	7.72

- Uncouple oxidative phosphorylation in bacteria
- Bind with surfactants to alter/improve the functionality of most surfactants
- Food contact ingredients – safe for workers, environment, many regulatory certifications
- Has applications across a broad spectrum of surfactant types and end-use applications

Water Droplets on Golf Green



- Irrigation lines with as low as 1ppm dose are kept clear of biofilm
- The biofilm matrix aids scaling and therefore line plugging is reduced
- Hydrophobic loams and sands absorb water aiding crop water uptake

Hydrophobic Effect



Trial

- Application date: May 21, 2012
- Location: Sage Farms, Idaho
- Plot Size: 12' x 40'=480 ft²
- Carrier rate: 48 gal/ac
- Products evaluated
- Adsorb RST
- FGX3
- Agriplier
- Problem: Poor water infiltration due to the soil sealing off and then forming a crust when it dries

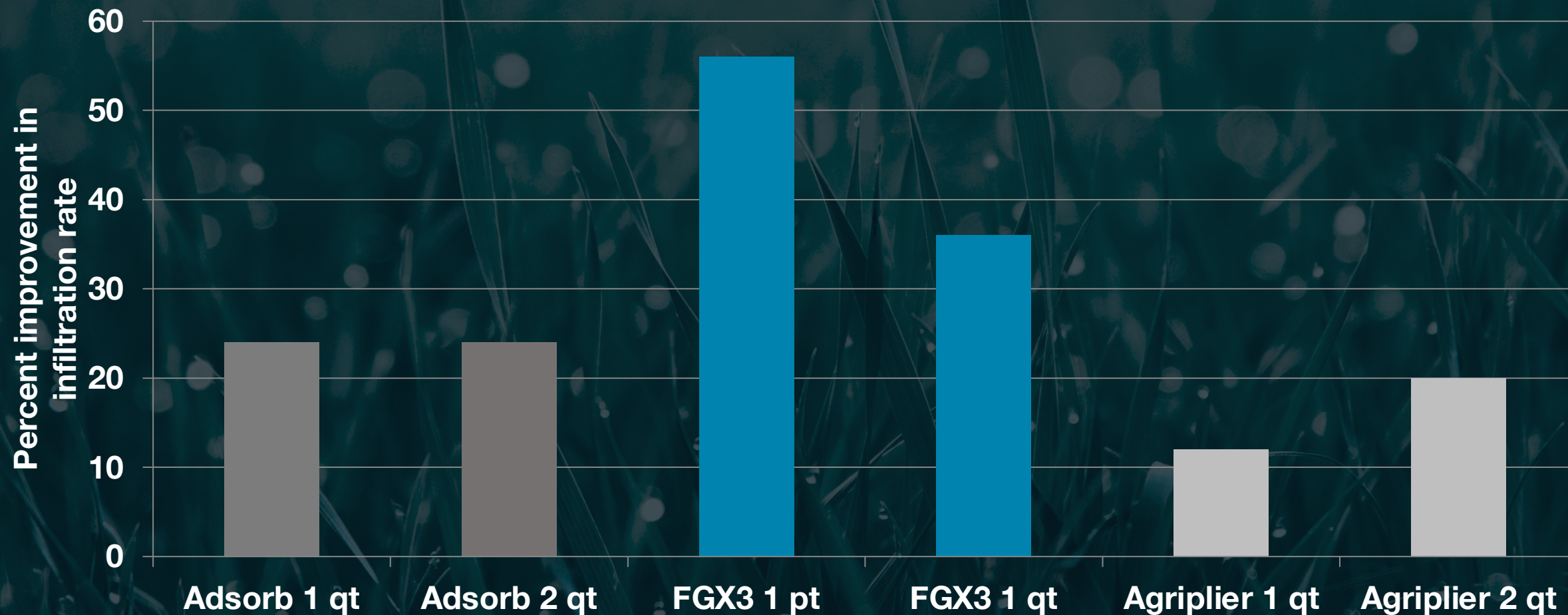


Products were surface applied with 48 gallons per acre of carrier to the soil surface after a rotary hoe had been used to break up the crust that had formed on the surface that reduced water infiltration.

The amount of time required for 1.3 inches of the water to infiltrate the soil was measured for each product and compared to a untreated control



Results



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Trial

**28%
Increase
in Yield**

- Application date: May 21, 2012
- Location: Soy Bean Farm, Brazil
- Determined use rate at 16 oz. / Acre (0.37 ounces / 1,000 ft²)
- Frequency of application recommended at 21-28 day intervals
- Soya Bean normal production is 75 x 60Kg bags per hectare – Dosed field produces 96 bags per hectare
- Dose is 2 liter of Next own blend probiotic with nutrients plus 450ml FGX3 per irrigation cycle to one hectare
- We mix our next fog with probiotic bacteria, only on the same day of application.
- The probiotic bacteria were acclimatized to the soil type, tested for several years with significant changes related to target plants. We modify the bacteria cohort according to the soil in each location.



Water Droplet Penetration Test

Lab Testing on Turf

Std Adjuvant = 9.42 sec

FGX3 = 3.90 sec

FGX3 + Std Adjuvant = 1.97 sec



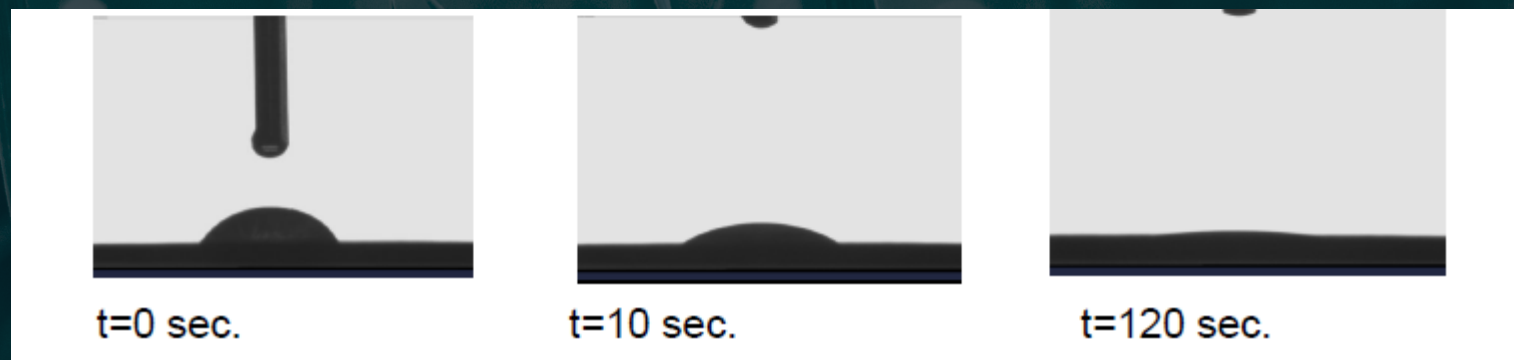
FGX3 impact was enhanced with the standard adjuvant used on the greens; as was the adjuvant with FGX3

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Water Droplet Penetration Test on Cabbage Leaf

FGX3



**Commercial
Surfactant**



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Corn Crop Survival During Drought in Brazil



Photographs after 25 days
post 1st irrigation dose



Brazil Drought Resistant Corn Crop

37 DAYS OF DRY SPELL IN MARIALVA



FGX3 Dosed: 20-21 Growing Season



Neighbouring Plantation Undosed

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Trial



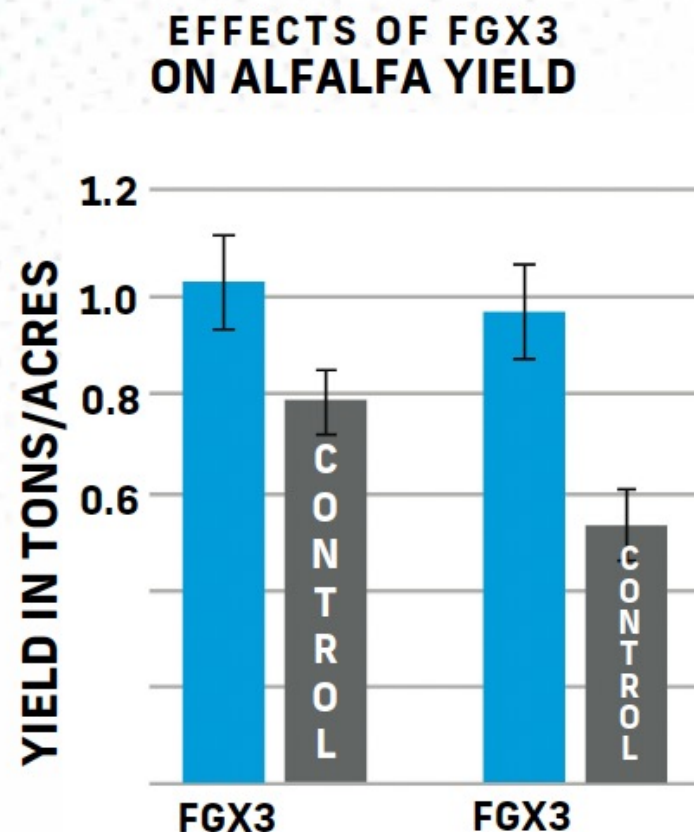
- 5 more bags of wheat per Hectare with additional 25% savings in phytosanitary
- control with greater than 4% PMS - Plant moisture stress alleviation
- Maize yield increased by 12.5 sacks per hectare (60Kg sacks)



Alfalfa Yield Increase

Test plot yields (tons/acre)

	Test East	Control East	Test West	Control West
Mean	1.016	0.794	0.955	0.526
Std. Deviation	0.121	0.055	0.102	0.082
Minimum	0.835	0.685	0.769	0.413
Q1	0.925	0.753	0.889	0.448
Median	0.993	0.799	0.942	0.518
Q3	1.095	0.837	1.009	0.584
Maximum	1.336	0.898	1.266	0.727
n	30	30	50	50



- 10% increase in Yield
- Dose 10ppm, 6.48 gals per cycle
- 3 Irrigation cycles over 5-week harvest
- Dosing pump run for 50% of each irrigation cycle over 24 hours
- Dosed at a rate 450 US gals per min
- 648,000 gals irrigated at 23.85 acre-inches

nextTM F.O.G.
STOP

nextTM FGX3

Increased Nodule formation for legumes

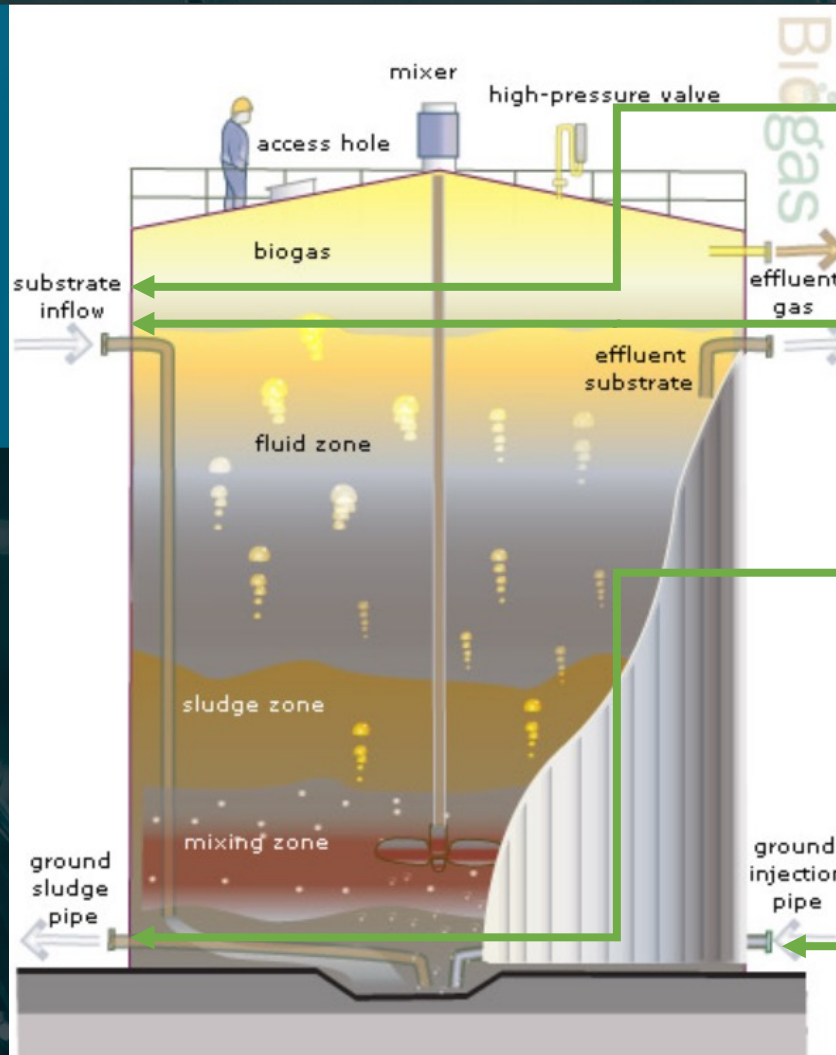


The nodules are a symbiotic bacterial action for fixing Nitrogen

nextTM **F.O.G.
STOP**

nextTM **FGX3**

Efficiency in Methane production with use of Next Technology in AD



Mixing Next Sand with the input sludge fixes ammonia and promotes ammonia bio-degradation to N₂. Ammonia concentration inhibits methanogenesis. Dose 2-10g/L

FGX3 Injection here will aid methanogenesis due to improved membrane transport in the bacterial cells dose 25ppm

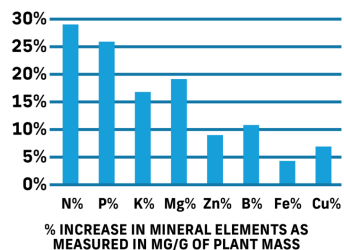
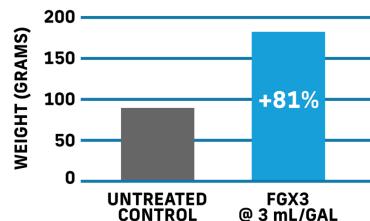
FGX3 injected into the sludge consolidation tank improves odour reduction and removes biofilm in the pipework feeding the centrifuge

Landia Venturi chopper pump externally Mounted here. Head space biogas is Recirculated improving gas production and mixing enhanced with FGX3 addition
<https://www.landiainc.com/case-studies/landia-digester-mixing-system-increases-biogas-by-20-percent>



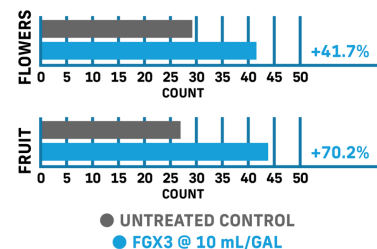
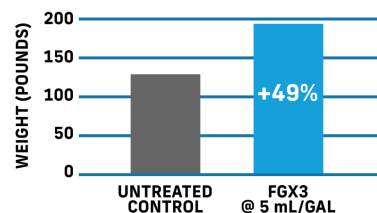
LETTUCE

81% INCREASE IN LEAF MASS AND
SIGNIFICANT NUTRIENT INCREASE



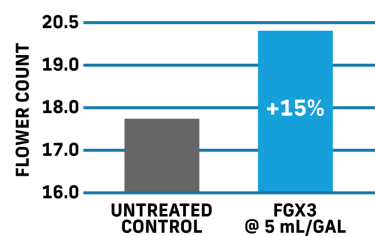
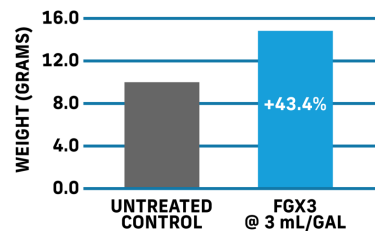
TOMATO

49.1% GAIN IN MARKETABLE FRUIT
41.7% LIFT IN FLOWERS
70.2% BOOST IN FRUIT SET



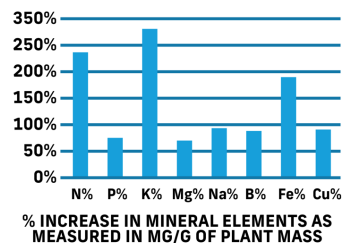
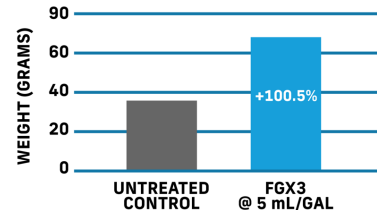
PANSY

43.4% BUMP IN TOTAL PLANT MASS
AND 15% LIFT IN FLOWER NUMBERS



PARSLEY

100.5% INCREASE IN SHOOT MASS
AND BOLSTERED NUTRIENT PROFILE



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- 2ppm continuous dose as optimum
- General crop increases across the board
- Earlier fruiting
- Earlier cropping
- Denser foliage
- Foliar spraying increases intake of Adjuvants like Zn for grapes and smaller doses of herbicides and pesticides required Applied dose 0.25% v/v

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THANK YOU