Changing the Game
RICE & CORN

GAME CHANGER AGRICULTURE

We help growers maximize the potential of crops, sustainably...

SPRAY GRO LIQUID FERTILIZERS AUSTRALIA

SIMON AGRI

FARMING Mindsets

Progressive / Precision - Driven

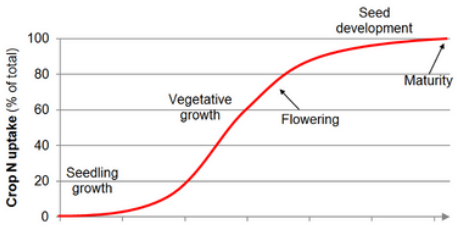
- How much % of Nitrogen is in my plants per KG of leaf tissue samples?
- From my leaf samplings, xx% increase in %N/KG leaf samples from planting to growing and reproductive stages correlates to an increase in tonnage between xx% to xx%
- Which fields or stages will require more steady, sustained supplementation?

Traditional / Conventional

- I put xxxKG Nitrogen per hectare in 3-5 split application timings
- For the last 3 seasons, xxxKG of NPK equates to more or less XXX tons per hectare
- Fertilization application rate will be uniform across fields for a more stable yield

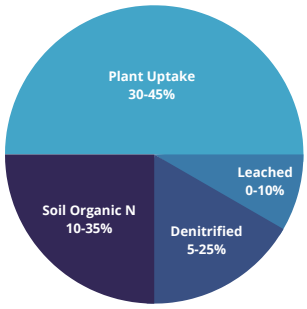
Why Smart-Release Foliar Fertilizers?

Seasonal Nitrogen Uptake Pattern



Time /Biomass Accumulation

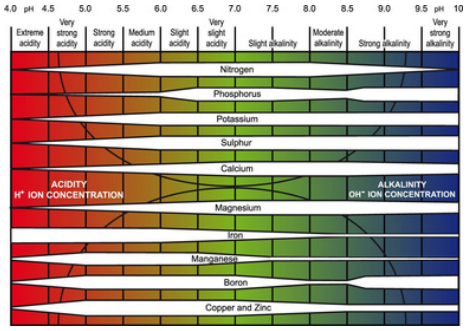
What happens to applied Nitrogen?

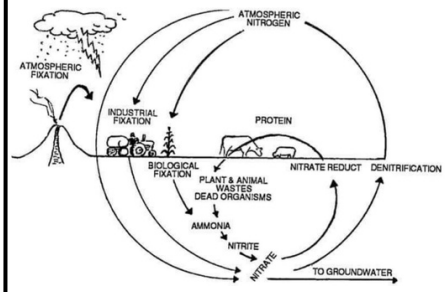


Plant Analysis Guide Nutrient Sufficiency Guide Ranges*

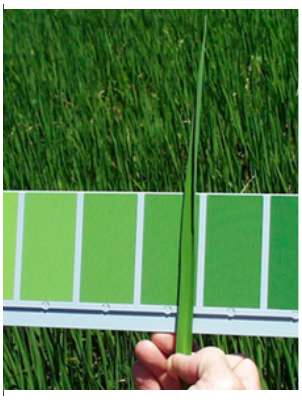
Crop		Percentage (%)							Parts Per Million (ppm)					
		N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Corn	From	2.80	0.20	0.25	1.80	0.20	0.30	0.01	6	25	30	50	6	20
	To	3.50	0.50	0.40	3.00	0.50	0.70	0.03	20	50	100	250	20	300
Rice	From	2.20	0.20	0.30	1.80	0.20	0.25	0.01	8	20	30	35	6	20
	To	3.50	0.30	0.50	3.00	0.40	0.45	0.03	20	50	60	120	15	300
Sorghum	From	2.50	0.20	0.30	1.70	0.20	0.30	0.01	6	25	30	50	6	20
	To	3.50	0.50	0.50	3.00	0.50	0.60	0.03	20	50	100	250	20	300

Nutrient Availability VS pH Levels





The Nitrogen Cycle



Source: Plant Analysis - A Diagnostic Tool, University of Wisconsin, Bulletin A2289, Agronomy Handbook, Don Ankerman, B.S. & Richard Large, Ph.D.

UNDERSTANDING NPK + TE

NUTRIENT	FUNCTIONAL VALUE	NUTRIENT	
NITROGEN (1-6%)*	• Primary building block for amino acids, protein, protoplasm and chlorophyll • Critical for rapid shoot growth, bud vigor, flower differentiation and fruit set • Drives tillering, stem and leaf area development	COPPER (2-50ppm)*	• Essential for flowering, heading and overall crop development • Promotes grain filling in cereals and biomass translocation from the stem • Critical for photosynthesis
PHOSPHORUS (0.05-1%)*	• Restores the vital energy production of the plant to increase root and shoot growth • Promotes roots, flower and seed development • Hastens maturity and fruit development	MANGANESE (5-500ppm)*	• Aids in Nitrogen utilization and assimilation essential for growth • Stimulates enzymes required in photosynthesis • Aids in the absorption of Phosphorus and synthesis of chlorophyll
POTASSIUM (0.3-6%)*	• Promotes biosynthesis of sugars and starches leading to higher yield and brix • Restores vital crop water balance • Regulates stomatal opening to improve photosynthesis • Enzymatic activator for biomass/volume production	BORON (2-75ppm)*	• Aids in Calcium translocation (roots, cell wall) • Shoot lignification, root growth • Transport of water, potassium and sulfur • Sugar translocation to canes and fruits
IRON (10-1000ppm)*	• Helps in chlorophyll formation giving the plant oxygenated and healthy green color • Assists in plant energy production • Helps reduce nitrates and sulfates	ZINC (5-100ppm)*	• Synthesis of proteins and auxins • Calcium translocation • Regulates nutrient uptake • Early root growth, rapid crop response • Uniform maturity, crop yield quality

*Approximate Concentration in Plants

NITROBOOST®

"The Growth & Yield Booster"

- 21 to 30 Days Smart-Release Fertilizer
- 4x to 30x plant absorption efficiency
- Superior growth & yield performance

NPK 30.75-0-0 %w/v
3,070 mg/L ZINC
3,070 mg/L BORON

SMART RELEASE NITROGEN SERIES

High absorption rate at 4x to 30x traditional foliars & granulars

Stimulates growth and tillering while increasing leaf surface permeability

Methanal component serves as sticker during foliar spray

Boron for growth and translocation of sugar, calcium, water, potassium & sulfur

4 Release Modes: moisture, heat, sunlight and microbial

Smart Release Nitrogen- long chain methylene urea, high Nitrogen level

Zinc for rapid crop response and synthesis of auxins, root growth

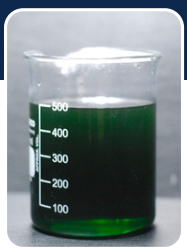
Technical grade, no chlorides, no burn

Low salt index, no phytotoxicity

NITROBOOST	Other Brands
	
Homogenous Neon Liquid	Coagulated Precipitates

COMPLETO+®

"Enhancing Crop Quality, Volume Plus BRIX"



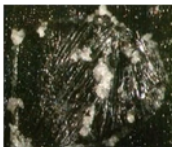
Dark Green
Homogenous Liquid

- 14 Days Smart-Release Fertilizer
- 4x to 30x plant absorption efficiency
- Enhances crop quality & performance

NPK 19 - 9 - 19 %w/v
PLUS Chelated
Trace Elements (TE)

Boron (200mg/L)
Copper (630mg/L)
Iron (1,300mg/L)
Manganese (700mg/L)
Zinc (630mg/L)

Leaf Nitrogen Distribution

COMPLETO+ NITROBOOST	Other Brands
	
Highly Absorbable Micro-Droplets	Non - Absorbable Dried Crystals

High absorption rate at 4x to 30x traditional foliars & granulars

Restores the vital energy production of the plant to increase root and shoot growth

Phosphorous promotes root and shoot growth as well as tillering

Potassium serves as activator for biomass production, biosynthesis of sugars and starches for higher yield and brix factor

Boron for growth and translocation of sugar, calcium, water potassium & sulfur

Copper critical for photosynthesis and overall crop development

Iron helps in chlorophyll formation & overall plant energy (growth) production

Manganese aids in uptake and utilization of Nitrogen, Phosphorus & Magnesium

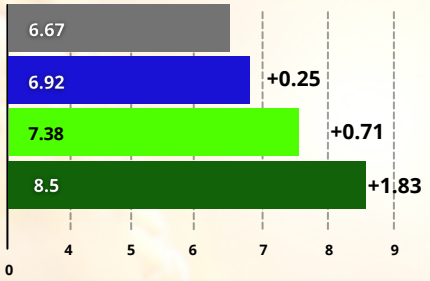
Zinc for rapid crop response, synthesis of auxins and for root growth

Performance of COMPLETO+® and NITROBOOST® in RICE

Treatment	Rate (li/ha)
Regular Rate Granular Fertilizer	*
50% RRGF* + COMPLETO+	4-4
RRGF* + NITROBOOST / COMPLETO+	5-5
RRGF* + NITROBOOST / COMPLETO+	5-5-5

RRGF* - Regular Rate Granular Fertilizer

Yield Performance (TON/HA)



Trial Details

- Variety - LP 937
- Planting Distance - 20cm x 20cm
- Planting Date - 13 December 2019
- Harvesting - 16 March 2020 (104 DAT)
- Treatment application - 35 DAT and 50DAT
- Spray volume per HA: 12 tank loads
- Trial site: Puypuy, Bay, Laguna
- Researcher: Doc Nap Saavedra

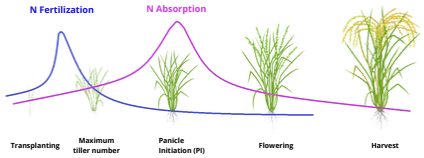
Conclusions

- Completo+ applied twice at 35 and 50 DAT at 4 liters/ha equivalent to 6.57% increase over the standard fertilization
- Tandem application of Nitroboost 5li/ha at 35 DAT and Completo+ at 50 DAT significally above farmer's practice
- Best results in terms of yield with 8.5 tons/ha with 3 applications with 5L/HA Completo+ at 15DAT, followed by 5L/HA Nitroboost at 30 DAT then capped by 5L/HA Completo+ at 50DAT

Cost/Value Points	NITRBOOST/COMPLETO+	Farmers Practice	GameChanger Advantage
Price per Liter / KG(Foliar)	Php650*	N/A	
Rate per Hectare (HA)	5 liters x 3 (Php9,750)	N/A	(Php9,750)
Frequency	3x (15/30/50DAP)	N/A	
Spraying-Labor Cost	Php400 x 3(Php1,200)	N/A	(Php1200)
RRGF* Regular Rate Granular Fertilizer Cost	Basal: 46-0-0 (4 bags) = Php12k Basal: 0-18-0 (1 bag) = Php2.6k 30DAT: 14-14-14 (4 bags) = Php7.25k Subtotal = Php21.85k	Basal: 46-0-0 (8 bags) = Php24k Basal: 0-18-0 (2 bag) = Php5.2k 30DAT: 14-14-14 (8 bags) = Php14.5k Subtotal = Php43.7k	
Total Fertilization Cost/ Hectare (HA)	Php32,800	Php43,700	Php10,300
Total Yield (Tonnage)	7.5	6.67	0.83 MT (+12%)
Total Yield (Php)	Php157,500	Php140,070	**Php17,430**
Savings-Regular Rate Granular Fertilizer	Php4,200	0	
Gross Value Advantage			Php28,330
Net Value Advantage			**Php28,330**
>Spray Volume: 10 x 16L - Spray Tank	> Completo+@ 15DAP & 50DAP > Nitroboost @30DAP		>Farm Gate Price of Palay - Php21/KG

RICE at 50% Granular Fertilizer Reduction

Typical Nitrogen Fertilization vs Absorption in RICE



RICE Gamechanger Foliar Feeding Program

NITROBOOST SMART RELEASE
3-5* liters/HA
30 DAT

COMPLETO+ SMART RELEASE
3-5 liters/HA
50 DAT

COMPLETO+ SMART RELEASE
3-5 liters/HA
15 DAT

SMART RELEASE NITROGEN™ SERIES

Trans-planting 13 20 27 34 41 48 55 62 69 76 83 90 97 104 111 118 125

VEGETATIVE / REPRODUCTIVE / RIPENING

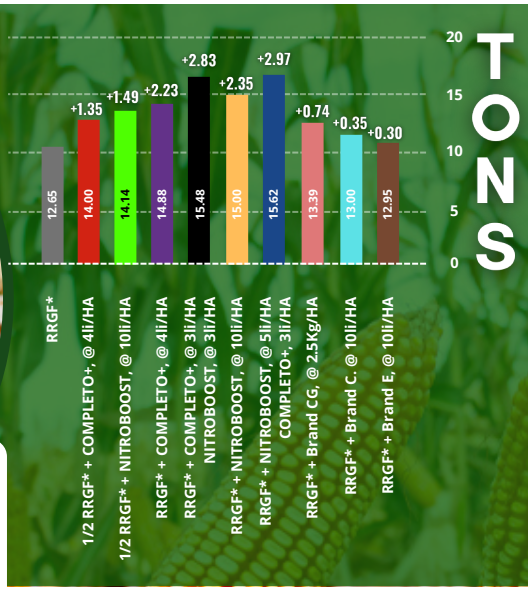
Basal Granular Fertilizer
Triple 14 at 400 KG
0-0-60 at 100 KG

Side Dress Granular Fertilizer
14-0-0
150KG

50% - 100% Fertilizer Replacement

*5-10 liters/HA at 50%-100% replacement of Regular Rate Granular Fertilizer (RRGF)
**Rule of thumb: 2-3 L Nitroboost or Completo+ to replace 1 bag of UREA or Triple 14

Performance of NITROBOOST® and COMPLETO+® on the Yield of CORN



Treatment Description	Rate (li or kg / ha)	Yeild Ton / Ha)	Yield Increase (ton/ha)	Yield Increase (%)
RRGF*	*		-	-
1/2 RRGF* + COMPLETO+	4-4	14.00	1.35	10.67
1/2 RRGF* + NITROBOOST	10-10	14.14	1.49	11.78
RRGF* + COMPLETO+	4-4	14.88	2.23	17.63
RRGF* + COMPLETO+	3-3-3	15.48	2.83	22.37
RRGF* + NITROBOOST	10-10	15	2.35	18.58
RRGF* + NITROBOOST/COMPLETO+	5-5	15.62	2.97	23.48
RRGF* + Brand CG	2.5-2.5	13.39	0.74	5.84
RRGF* + Brand C	10-10	13	0.35	2.77
RRGF* + Brand E	10-10	12.95	0.30	2.37

RRGF* - Regular Rate Granular Fertilizer

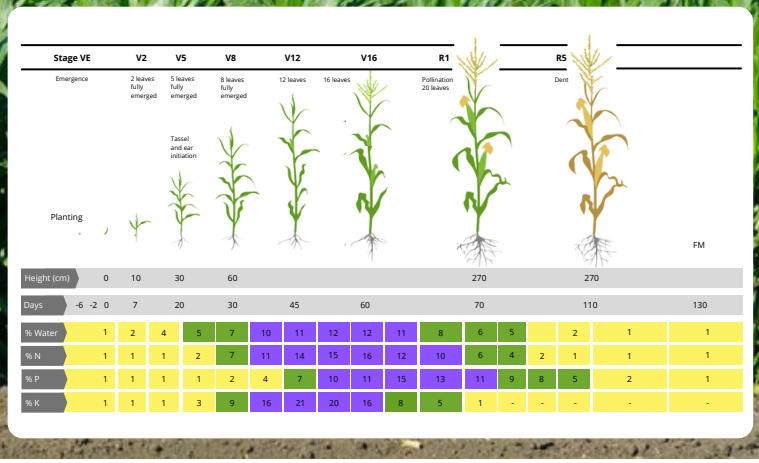
METHODOLOGY

- Trial site: Sta. Maria, Sto. Tomas, Batangas
- Variety: Pioneer P 4097 YHR
- Planting distance: 0.2m x 0.7m
- Planting date: 1 February 2020
- Harvesting: 22 May 2020
- Treatment Application:
  - 1st 19 March 2020 (45 DAP , Booting stage)
  - 2nd 30 March 2020 (56 DAP , Flowering stage)
- Researcher: Doc Nap Saavedra

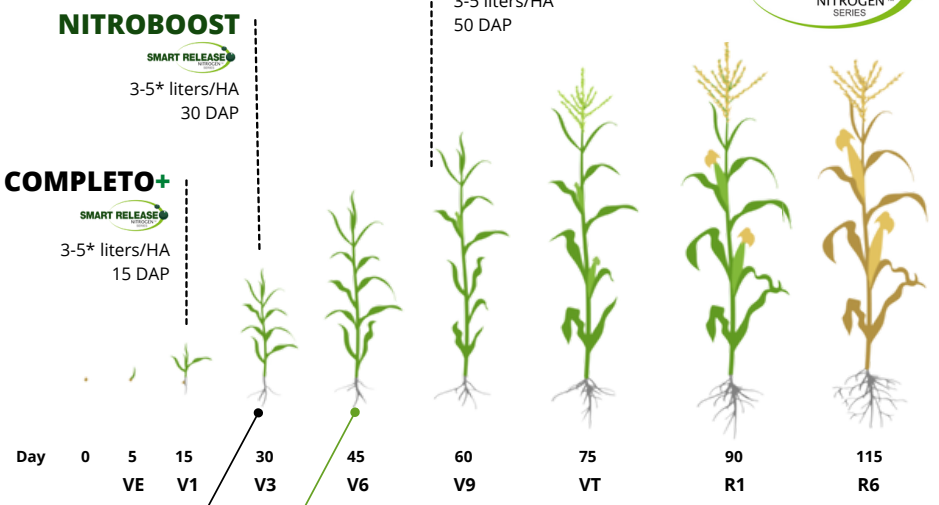
CORN at 50% Granular Fertilizer Reduction

Cost/Value Points	NITROBOOST/COMPLETO+	Brand CG	GameChanger Advantage
Price per Liter / KG(Foliar)	Php650*	Php270	(Php380)
Rate per Hectare (HA)	5 liters x 3 (Php9,750)	2.5KG x 2 (Php1,350)	(Php8,400)
Frequency	3x (15/30/50DAP)	2x (45/55DAP)	
Spraying-Labor Cost	Php400 x 3(Php1,200)	Php400 x 2(Php800)	(Php400)
RRGF* Regular Rate Granular Fertilizer Cost	46-0-0 (4 bags) = Php12k 0-0-60 (1 bag) = Php2.6k 14-14-14 (2.5 bags) = Php7.25k Subtotal =Php21.85k	46-0-0 (8 bags) = Php24k 0-0-60 (2 bags) = Php5.2k 14-14-14 (5 bags) = Php14.5k Subtotal = Php43.7k	
Total Fertilization Cost/ Hectare (HA)	Php32,800	Php45,850	Php13,050
Total Yield (Tonnage)	14.0	13.39	0.61 (plus 4.5%)
Total Yield (Php)	Php266,000	Php254,410	Php11,590
Savings-Regular Rate Granular Fertilizer	Php13,050**	0	0
Gross Value Advantage			Php24,640
Net Value Advantage			Php24,640
>Spray Volume: 12 x 16L - Tank	> Nitroboost @ 15DAP & 50DAP > Completo+ @50DAP	*Leading Foliar Brand CG	>Farm Gate Price of Corn - Php19/KG

CORN NPK Requirements Per Stage



CORN GameChanger Foliar Feeding Program



Side Dress 15DAP
Granular Fertilizer
46-0-0 or 21-0-0
250-300KG

Side Dress 30DAP
Granular Fertilizer
Triple 14 at 200KG
21-0-0 at 100KG

50% - 100% Fertilizer Replacement

*5-10 liters/HA at 50%-100% replacement of Regular Rate Granular Fertilizer (RRGF)

**Rule of thumb: 2-3 L Nitroboost or Completo+ to replace 1 bag of UREA or Triple 14

NITROBOOST®

"The Growth & Yield Booster"

Crop	Foliar Rate (Liters/Ha)	Recommendations
Vegetables	3-6	• Apply every 21-30 days from mid-crop
Brassicas	3-10	• Apply at early head development • Repeat every 21-30 days
Onions	2-10	• Apply from when sufficient leaf exists to intercept spray • Apply at bulb development at intervals of 21-30 days
Sugarcane	2-10	• Apply at 60 DAP, 80 DAP and 100 DAP (Days After Planting) • Option to apply at intervals of 21-30 days as needed from 120 DAP to 200 DAP via drone to further push yield volume • Alternating application with COMPLETO+ as needed especially with ratoon crop
Corn	3-10	• As Urea Booster (in addition to granular side dress) spray 3-5 liters per hectare at 25-30 DAT (Days After Transplant) to maximize yield • As Side Dress Urea Replacement, spray 10 liters per hectare at 25-30 DAT • Follow-up spray at 50 DAT with COMPLETO+ at the rate of 3-5 liters per hectare to maximize yield increase
Rice	3-10	• As Urea Booster (in addition to granular side dress) apply 3-5 liters per hectare at 25-35 DAT (Days After Transplant) to maximize yield • As Side Dress Urea Replacement, spray 10 liters per hectare at 35 DAT • Follow-up spray at 50 DAT with COMPLETO+ at the rate of 3-5 liters per hectare to maximize yield increase
Fruit Trees	3-10	• Apply from early bloom through fruit set • Repeat application after 30 days • Double spray rate at post-harvest • Spray volume at 2,500 liters per hectare or 2-6 tank loads per tree
Banana	2-10	• Repeat every 21-30 days until 4 weeks before harvest • Triple the rate per hectare when applied via fertigation
Pineapple	2-10	• Apply every 21-30 days from fruit set up to 4 weeks before harvest • Triple the rate per hectare when applied via fertigation
Turf (GRASS)	10-50	• Apply at 1:20 water dilution at 4-6 weeks interval for optimum turf (grass) growth • Can be applied as foliar spray at 1:10 dilution rate or drench at 1:20 dilution rate • SRN can release over 20 -30 days on leaf surface and up to 8-10 weeks in the soil
Cutflowers	2-10	• Do not apply as foliar spray when plants are already in bloom • To apply as foliar, use lower rate (5 liters) at 1:100 dilution; as drench or via fertigation use higher rate (10 liters) at 1:100 dilution

COMPLETO+®

"Enhancing Crop Quality, Volume Plus BRIX"

Crop	Foliar Rate (Liters/Ha)	Recommendations
Vegetables	3-6	• Apply every 14 days from mid-crop or when flowering starts
Brassicas	3-6	• Apply at early head development • Repeat spray every 14 days or as follow-up to NITROBOOST
Onions	3-10	• Apply from when sufficient leaf exists to intercept spray • Apply at bulb development
Sugarcane	2-10	• Apply at 100 DAP and 115 DAP (Days After Planting) • Option to apply at intervals of 14 days as needed from 130 DAP to 250 DAP via drone to further push yield volume and sweetness (Brix/PSTC) • Best to apply after NITROBOOST when canopy closes and up to 2.5 to 4 months before harvest for higher brix factor or sugar content
Corn	3-10	• Apply at 45 DAP and follow-up spray at 55 DAP to maximize yield advantage
Rice	3-10	• Apply at panicle initiation • Apply at 35 DAT (Days After Transplant) • Follow-up at 50 DAT to maximize yield and grain quality
Fruit Trees	5-10	• Apply from early bloom through fruit set • Repeat application after 30 days • Double rate of application per hectare at post-harvest • Spray volume at 2,500 liters per hectare or 2-6 tank loads per tree
Banana	2-10	• Apply every 14 days from fruit set to harvest • Triple the rate per hectare when applying via fertigation
Pineapple	2-5	• Apply every 15 days early in season and from fruit set to harvest • Triple the rate per hectare when applying via fertigation
Mango	10-50	• Apply at the minimum rate at Bud Swell and Panicle Emergence • Double the rate of application per hectare at Pre-flowering • At flowering stage, apply minimum rate per hectare • Spray volume at 2,500 liters water per hectare or 2-6 tank loads per tree
Cutflowers	2-10	• Do not apply as foliar spray when plants are already in bloom • To apply as foliar, use lower rate (5 liters) at 1:100 dilution; as drench or via fertigation, use higher rate (10 liters) at 1:100 dilution

BIG TIME HARVEST, BIG TIME FARMER

"In my field trials and commercial farm areas, the combination of NITROBOOST & COMPLETO+ sprayed alternately in both highland vegetables (cabbage, potato, broccoli, cauliflower, carrots, etc.) and lowland crops (eggplant, ampalaya, string beans, tomato, rice, corn etc.) produced the best results in terms of yield volume and crop quality compared to traditional farming inputs and foliar fertilizers.

Indeed, the patented smart-release action of both NITROBOOST & COMPLETO+ which facilitates sustained foliar feeding of both macro-nutrients (NPK) and micro-nutrients (Boron, Copper, Iron, Manganese, Zinc) are translating to bountiful harvests and better income to benefit the lives of fellow farmer-entrepreneurs wanting to experience BIG TIME yields."

SMART RELEASE NITROGEN SERIES

Napoleon 'Doc Nap' Saavedra
Retired R&D Manager of a Swiss Multinational Agrochemical & Seeds Company
Farmer-Entrepreneur & Agronomy Research Consultant, Los Banos, Laguna

"I have seen the extraordinary impact of the NITROBOOST & COMPLETO+ alternating sprays in my lowland crops (ampalaya, pepper,rice & corn) versus my usual foliar fertilizers. I have experienced significantly increase in tonnage and more pickings over the growing period aside from higher percentage of 'class A' quality fruits.

NITROBOOST & COMPLETO+ smart-release fertilizers are the new precision farming tools for growers who are serious about maximizing farm productivity with higher yields and superior crop quality. With prices of granular fertilizers skyrocketing nowadays (double that of last year), we need new (nano) technology products like NITROBOOST & COMPLETO+ that maximizes the yield potential and quality of the crops and ultimately giving us farmer-entrepreneurs the highest returns from our inputs. Kung gusto mo maging BIG TIME ang harvest mo, NITROBOOST & COMPLETO+ dapat nasa fertilization program mo."

Al Gabriel 'Prof AlZam' Zamora
Agriculturist & University Professor
Farmer-Entrepreneur, Dumaguete City, Negros Oriental

SMART RELEASE NITROGEN SERIES

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SPRAY GRO AUSTRALIA · SIMON AGRI