



Republic of the Philippines
CAMARINES NORTE STATE COLLEGE
College of Agriculture and Natural Resources
Talobatib, Labo, Camarines Norte

04 July, 2014

TRAVEL REPORT

Duration: July 02, 2014

Purpose: To survey areas affected by cocolisap fronting Camarines Norte and apply preventive treatment using organic anti pathogen solution.

Activity: 1. Coordination with FITS center (Sta. Elena) thru the CNSC Extension Office.
2. Documentation of suspected infected coconuts along the highway of Sta. Elena to Tagkawayan, Quezon.
3. Identification of coconut farm (co-operator) with known incidence of cocolisap infestation.
4. Application of organic anti-pathogen solution.

Team: **Dr. Lilibeth A. Roxas** – Director, Extension
Prof. Michelle S. Cabonell- Director, Research
Prof. Bartolome S. Papares- Campus Director, CNSC-Labo
Prof. Jeffrey L. Pamu – CNSC- Extension Coordinator- Labo Campus
Dr. Arlene C. Alegre- Researcher

Observation:

1. Along the national highway of Labo going to Sta. Elena, some coconut leaves were observed to have yellow coloring. Although there was a high suspicion of cocolisap infestation it is difficult to confirm due to distance and height of the coconut trees. Some trees were photographed for documentation purposes.

2. At Brgy. Colong-colong, Tagkawayan, Quezon province we found the coconut farm owned by Mr. Cesar Peria. His 16 hectare coconut farm has 100% pest incidence. Few months ago the PCA conducted a treatment using STARKLE 20 SG, a chemical with an active ingredient Dinotefuran (20%). According to the PCA representative, this chemical has a validity of one (1) month. From the current status of the plants, the chemical seems to have a short term effect since the presence of scale insects were observed.

According to the farm caretaker, the chemical was applied by drenching method after building a canal about one meter in diameter around each coconut trees.

Starkle is known to have the following technical and commercial details:

ACTIVE INGREDIENT: Dinotefuran 20 SG

MODE OF ACTION: Systemic, with contact and stomach action, effects insect's nervous system. Nicotinic Acetylcholine receptor agonist /antagonist.

CHEMICAL GROUP: Neonicotinoid

MANUFACTURER: Mitsui Chemicals Agro Inc., Japan

According to the Material Safety Data Sheet (MSDS) of this product, the chemical Dinotefuran Technical is highly toxic to bees. The acute oral and contact LD₅₀ in bees were 0.056 µg and 0.022µg/bee respectively.

The pesticide is also toxic to shrimp and should not be applied directly to water and to areas where surface water is present or to intertidal areas below mean high water mark. At the same time, it should not be applied where runoff is likely to occur. The product further warned not to be applied where weather conditions favor drift from areas treated.

With these data, this product seemed not appropriate to be used widely especially in places where coconuts are planted near coastal areas. Massive use of this product will endanger our aquatic animals and probably other sea creatures. Aside from this, the important natural population of bees in the environment will be wiped out and therefore disrupting the ecology of areas planted to coconut. Bees are beneficial insects are natural pollinators.

Recommendation:

1. A follow –up observation should be done on July 11, 2014 to verify the effect of the treatment done (July 02, 2014).
2. Second treatment should be administered to previously treated coconut trees to eliminate possible newly developed scale insects if any.
3. A new set of coconut trees should be treated with the organic anti pathogen solution to reinforce the result of the first treatment.
4. A long nozzle sprayer or a defogger should be used to administer application of the anti-pathogen solution efficiently and economically.
5. Application of the organic anti –pathogen is highly recommended as safe. The Material Safety Data Sheet of this product states that it is non-toxic to aquatic animals at 5% or lower concentrations. Since it is biological and made of plant extracts it poses no harm to beneficial insects like bees.

Prepared by:

Arlene C. Alegre, Ph.D.

Researcher



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July 04, 2014

PROF. BARTOLOME S. PAPARES
Campus Director

Sir,

Submitting herewith is the travel report on initial treatment of cocolisap infested coconut trees conducted last July 02, 2014 at Tagkawayan, Quezon for your reference.

Thank you very much.

Very truly yours,

ARLENE C. ALEGRE, Ph.D.
Asst. Professor 1

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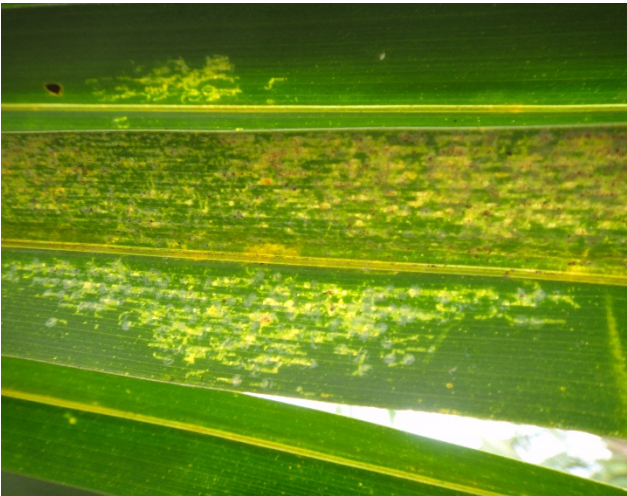
Documentation



Sta. Elena



The Team





Republic of the Philippines
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23 July, 2014

TRAVEL REPORT

Date: July 10, 2014
July 14, 2014
Place: Bry. Colong-Colong, Tagkawayan
Quezon Province
Purpose: 1. Record observation on previously treated coconut trees.
2. Apply treatment to new set of coconut trees as preventive measure.

Observation:

July 10, 2014



(a)

(b)

1. Coconut leaves previously infested with scale insects were found clean and free from insect's presence eight days after the initial treatment. Still visible in the photo shown above are the yellow specs (a) resulted from the scale insects feeding by sucking the plant's juice. With advanced feeding, usually on the tip or younger part of the leaves, yellowing is intense.
2. A second spraying on the same set of coconut trees was performed as a follow-up treatment. This is to ensure illumination of any eggs or young scale insect.
3. A second set of coconut trees composed of newly young makapuno trees were sprayed (a) to create a protective covering for these young growing coconuts as shown in photos below Dr. Lilibeth A. Roxas Director for Extension) with the researcher (b).



(a)



(b)

July 14, 2014

1. Photos (a, b, c, d) below showed the scale insect infestation in coconut growing along the national highway at Brgy. Paraiso, Sta. Elena, Camarines Norte. It is assumed that the vast coconut plantation shown above (e,f) were mostly infected by scale insects basing from the yellowish coloring at the tip of the leaves which are the insect's favorite point of attack.



(a)



(b)



(c)



(d)



(e)



(f)

3. At the site in Brgy. Colong-Colong, Tagkawayan, Quezon Province.

The first set of coconut trees treated with the organic anti-pathogen plant extract were re-inspected and were seen still free of any scale insect. Shown below is the CNSC-Labo Campus Director inspecting the leaves. The one big makapuno tree was sprayed with the treatment (d) with Prof. Jeffrey Pamo. The young makapuno trees were not re-sprayed due to technical problem with the sprayer.

The researcher (c) also inspected some parts of the farm to see other crops with scale insect damage.



(a)



(b)



(c)



(d)

Recommendations:

1. Re-inspection of the treated trees should be done on July 28 to observe effect of the treatment.

2. Second spraying of the makapuno young trees to strengthen protective covering of the trees from infested trees all around the farm.

Prepared by:

ARLENE C. ALEGRE, Ph.D.
Asst. Professor 1



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College of Agriculture and Natural Resources
Talobatib, Labo, Camarines Norte

July 23, 2014

PROF. BARTOLOME S. PAPARES
Campus Director
This College

Sir,

Greetings.

Submitting herewith the travel report on the July 10, 2014 and July 14, 2014 trip to Brgy. Colong-Colong, Tagkawayan Quezon Province to conduct preliminary treatment for cocolisap.

For your reference.

Thank you very much.

Very truly yours,

ARLENE C. ALEGRE, Ph.D.
Asst. Professor 1

VISION

"CNSC as a premier higher education institution in the Bicol Region providing excellent services and developing graduates with highest ethical standards"

MISSION

The Camarines Norte State College shall provide higher and studies in the fields of education, arts and sciences, economics, health, engineering, management, finance, accounting, business and public administration, agriculture and natural resources development and management and ladderized courses. It shall also respond to research, extension and production services adherent to progressive leadership towards sustainable development.



Republic of the Philippines
CAMARINES NORTE STATE COLLEGE-Labo Camarines Norte
Talobatib, Labo Camarines Norte

TRAVEL REPORT

August 22, 2014

DATE: August 21, 2014
PLACE: Brgy, Colong-colong, Tagkawayan
Quezon Province
PURPOSE: To perform ocular inspection on organic anti-pathogen treated coconuts.

OBSERVATION:

1. After forty-nine (49) days, coconut trees treated with the solution (July 2, 10 & 14) remained free of infection except 1 tree out of 10 with incidence of new infestation.
2. Thirty-eight (38) days after the last spraying (July 14, 2014) the older trees twice treated (July 10 & 14, 2014) with the organic anti-pathogen solution remained free of infestation.
3. During the initial treatment, majority of the coconut trees were already drenched treated with Starkle for almost 2 months and were already showing high incidence of infestation. Test plants used for the treatment of the organic anti-pathogen are those not previously treated with Starkle.
4. So far, 5 weeks after the typhoon Glenda, all coconut trees not treated with the organic anti-pathogen in the area showed high incidence of *coco-lisap* infestation.

RECOMMENDATION:

1. Basing from the preliminary treatments of organic anti-pathogen solution, it has the capability to control the scale insect causing *coco-lisap* of coconuts in barangay Colong-Colong, Tagkawayan, Quezon. It is therefore being recommended that the solution be used to a wider *coco-lisap* infested areas to control the spread of the scale insects in the province and if possible nationwide.
2. The organic anti-pathogen solution used to control the scale insect attacking coconuts is not harmful to man and the environment and will not pose any detrimental effect wherever it is applied. Attached to this report is the comparative MSDS of this solution (Path-Away^R) and Starkle

which is currently used by the DA-PCA to address this infestation in all coconut growing areas in the Philippines.

3. According to ¹Abustan 2014, PCARRD is looking into possible ways to strengthen research and development support on coconut farm recovery in CALABARZON. This is in the hope that through systemic, preventive, and immediate S&T-based integrated pest management strategies, affected farmers will be able to recover soon from the effects of *coco-lisap* infestation.

As regards, this solution could be a timely opportunity for us to find a control measure that will not only eradicate the scale insect pest but will also take care of our environment.

Submitted by:

ARLENE C. ALEGRE, Ph.D.

Asst. Prof. 1

Cc: OCD
OVPRE
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¹ Abustan, S.A.F. A.2014.PCARRD FARMNEWS. Vol.111. No.1. January-March 2014.pp 15-17.

A Comparison of STARKLE 20 SG and Path-Away® Solution for Use in an Agricultural Setting

The purpose of this comparison is to identify and quantify differences so as to logically identify the product that will produce the best efficacy and the least amount of environmental damage particularly looking at long term product application. This information is based on product content.

Product		Product	
<u>STARKLE 20 SG</u>		<u>Path-Away® Solution</u>	
Active Ingredient	Dinotefuran	Active Ingredient	Proprietary Plant Bio flavanones
Hazards Identification	Warning!	Hazards Identification	All components listed as GRAS
OSHA Hazards	Harmful by ingestion. If swallowed call a POISON CENTER.		
SARA 311/312 Hazards	<i>Acute Health Hazard</i>	SARA Hazards	None
HMIS Classification	1.	HMIS Classification	0
Inhalation	May cause respiratory tract irritation. Move person to fresh air. <i>If not breathing give artificial respiration.</i> Consult physician.	Inhalation	Standard ASHRAE ventilation.
Skin	May be harmful if absorbed. May cause skin irritation. Wash with plenty of soap/water. Consult physician	Skin	Non-irritant at 5% and below. Product is Used as an alcohol free, chemical free hand Sanitizer as well as skin cream for rash.
Eyes	May cause eye irritation. Rinse minimum of fifteen minutes. Consult physician.	Eyes	Slight irritant above 5% concentration
If swallowed	Rinse mouth with water. Consult physician.	If swallowed	Consume 6-8 fluid ounces of water.
Accidental Release Measures	Use personal protection. Ensure adequate ventilation and avoid dust formation.	Accidental release	Flush with water for concentrate. Pick up with absorbent materials. Regular disposal.
Environmental Precautions	Do not let product enter drains. Discharge into the environment must be avoided.	Environmental Precautions	Totally biodegradable and non-harmful.
Containment of disposal. Cleanup	Keep in suitable closed containers for disposal.	Containment of Cleanup	Can be disposed of in landfill.
PPE Respiratory	Where risk is apparent utilize N95 (US) or type P1 (EN 143) respirator.	PPE Respiratory	None needed. Closed chamber exposure for 8 hrs./day during 5 day/week for 90 days indicated no effect at 100-150 mg/m3 air.
Hand Protection	Handle with protective gloves.	Hand Protection	None needed
Eye Protection	Safety glasses with side shields.	Eye Protection	Glasses
Skin/Body Protection	Choose protection according to concentration.	Skin/Body Protection	None needed
Hygiene Measures	Wash hands before breaks and at end of day.	Hygiene Measures	No special precautions needed
Flash Point	No data available	Flash point	171 C (340 F)
Solubility in Water	39.8g/l at 20 C (68 F)	Solubility in Water	Totally soluble
Toxicological Data	Oral LD50 (rat) 2,000mg/kg Dermal LD50 (rat) >2,000mg/kg	Toxicological Data	Oral LD50 @ 5% (rat) 100,000ng/kg Dermal LD50 @ 5% (rat) >100,000mg/kg
Ecological Data	<i>Toxic to bees. Toxic to soil organisms. Toxicity to fish, daphnia and other aquatic invertebrates. Toxic to algae.</i>	Ecological Data:	Non-toxic to aquatics, bees, mammals.
Biodegradability	According to test results it is <i>not readily</i>	Biodegradability	Totally biodegradable

biodegradable. <i>NOTE: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal! May cause long term adverse effects in the aquatic environment.</i>			
Additional	None available	Additional:	USA Registration # 4,032,774 N.Z. EPA #HRS100548/100549 Halal Certified # 9-20030000000-2 BioGro Certified # 5479 Organic/No
Proven Safe Efficacy	Not available	GMO	IFOAM Meets Standards MPI OOAP-EU Meets Standards MPI OOAP- USDA Meets Standards MPI OOAP- Taiwan Meets Standards JAS (Japan 2009) Meets Standards
Product of various	Product is produced in various labs by Manufacturers.	Proven Safe Efficacy	insects. 120+ fungi, bacteria, yeasts, viruses,
		Certified Lab Testing	USA New Zealand Canada Cyprus
		Product of	GICC LLC P.O. Box 3407 Bluffton, SC. 29909 USA +1-843-368=7063

Compiled by:

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