

Technologies and Information Generated by the NARRDN

Pest/Weed management

Title of Technology/Information	Status	Year Reported	Implementing Agency
Fungicidal effect of <i>Jathropa</i> oil extract derived from physic nut against banana anthracnose/Yago	Technology for dissemination	2004	NVSU
Lagundi leaves as effective control against storage pests of garlic/Pascua, et.al.	Technology for dissemination	2004	MMSU
Earwig: a new biological control agent for corn borer and other lepidopterous pests/Aquino, M.M., Maramag, A.Z., Argonia, C.L., Miguel, V.G., Manaligod, M.R., Baysa, E.D., Lorenzana, O.J., Caranguian, L.M.	Information for Dissemination	2003	DA-CVIARC
Bagging of mango fruits/Zamora, N.F. - results in fruits with lower insect and disease damage	Information for Dissemination	2003	BPI-NMRDC
Integrated pest and disease management for citrus/Tangonan, N.G., Evangelista, C.C., Ruano, C.P. - <i>Peperomia pellucida</i> and <i>Euphorbia hirta</i> can control growth of fungi <i>Fusarium sp.</i> and <i>Curvularia sp.</i>	Information for Dissemination	2003	USMARC
Indigenous botanical pesticides against whitefly (sweetpotato)/Tatoy, B.F., Abragan, F.N., Macabugto, J.B., Salvani, J.B., Apiag, C.T., Ramos, L.A. - extracts of tobacco (<i>Nicotiana tabacum</i> and <i>N. rustica</i>) leaves, hot pepper (<i>Capsicum frutescens</i>) leaves, rhizomes of dulaw (<i>Curcuma longa</i>), and roots of tubli (<i>Derris elliptica</i>) had fast-acting effects both in the laboratory and screenhouse - slow-acting poison was obtained from the extracts of neem (<i>Azadirachta indica</i>) leaves and seeds, madre de cacao (<i>Gliricidia sepium</i>) leaves, vines of makabuhai, (<i>Tinospora crispa</i>) and wild sunflower (<i>Tithonia diversifolia</i>) leaves	Information for Dissemination	2003	DA-NOMIARC
Integrated weed management practices for sugarcane/Nierves, J.C., delos Santos, D.A., Morales, L.C.	Information for Dissemination	2003	SRA-LGAREC
Management of garlic storage pests/Pascua, M.E., Gabriel, M.L.S., Layaoen, T.Z., Fermin, G.C., Antonio, M.A., Pablico, S. Ma. - hot water treatment can prolong shelf life of garlic bulbs stored in boxes - less weight loss and bulb damage in garlic bulbs stored with dried lagundi (effective for four months)	Information for Dissemination	2003	DA-ILIARC

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Botanical pesticides against vegetable insect pests - formulated from <i>Derris elliptica</i> (tubli), <i>Tinospora rumphii</i> (makabuhay), and <i>Dioscorea hispida</i> (kayos) - effective for control of aphids, mites and adult whiteflies - not effective against eggplant borer and fruit borer	Information for Dissemination	2003	UP Visayas
Crop wastes as potential sources of natural medicine/cosmetic products, pesticides/insecticides, and paper products/Torres, L.D., Ortinero, C.V., Monserate, J.J. - plant extracts from the different crops showed specific insecticidal or medicinal properties. E.g., extracts from the seeds of ampalaya showed insecticidal property against housefly; the seeds of sinkamas against leafhopper; and the stems, roots, and leaves of "Apollo" tomato, against brown planthopper.	Information for Dissemination	2001	CLSU
Tobacco scraps as control of Golden Kuhol (<i>Pomocea caniculata</i>) in rice fields of Ilocos Norte/James, M.C., Bautista, M.S., Castro, R.C.	Information for Dissemination	2001	PhilRice-Batac
Improved insect pest management package of technology for cotton/Cacayorin, Solsoloy, Santiago, Tallon, Dumlan and David - Carbofuran (Furadan) application along the furrows at planting; dibbling of carbofuran near the base of the cotton plant at 55 days after planting - Planting of okra as trap vrop for flower weevil within the periphery of the area planted to cotton - Releasing Trichogramma as biological control agent against bollworm - Spraying insecticides: <ul style="list-style-type: none"> ▶ Vegetative to squaring stage – 22-63 DAP ▶ Flowering stage (64-84 DAP) ▶ Bolling stage (85-105 DAP) 	Technology for dissemination	1999	CoDA
Control of peanut bacterial wilt disease (technologies/practices which can be easily adopted by farmers in upland plains, river flood plains, and gently sloping areas/ Aquino, Tumamao, Lorenzana, Perdido, de Guzman and Perdido - Application of gypsum (calcium sulfate, rhizobium inoculant, VA-Mycorrhiza (VAM), chicken dung, and rice hull ash - Ridge planting for the wet season crop (growing of peanut in broad beds) - Soil flooding for 30 days prior to sowing	Technologies for dissemination	1999	DA-CVIARC

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during the wet season (practical after the harvest of irrigated upland and lowland rice) - Rotation with corn and rice during the dry season			
Agro-technical approach (cropping system approach) for bacterial wilt (BW) management/Tatoy, Abragan, Lapoot, Apiag, Salvani, madriaga, Bacho, Tumapon, Duna, Dumayaca, Flores, Ramos and Maape - Planting corn and bean after potato	Technology for dissemination	1999	DA-NOMIARC
Management strategies for cotton flower weevil	Information for Dissemination	1999	CoDA
Management option to mitigate methane emission from rice/Corton, Bajita, Pamplona, Grospe, Lntin and Wassmann - Increase rate of N fertilization - Use of ammonium sulfate in any sulfate containing fertilizers - Phosphogypsum as ameliorant - Ricestraw compost application	Information for Dissemination	1999	PhilRice
25 EC of Piriamiphosmethyl (PM, 25 EC Deltametrin as admixture grain protectant for corn/Dela Cruz, Laruza, Rapuza, Villanueva and Gutierrez	Information for Dissemination	1999	BPRE
Icloneumonid sp. Effective biological control agent for cotton bollworm/Pascua	Information for Dissemination	1999	CoDA
Chemical insecticide for cotton pest control/Solsoloy, Domingo, Cacayorin and Damo - Study the effectiveness of different insecticides on aphids, Leafhopper, Bollworm and natural enemies	Information for Dissemination	1999	CoDA
Ricehull ash for control of white stem borer/Batay-an, Mancao, Soria, Berganio, Montecalvo and Libertario - Black and gray RHA applied in seed bed at 1.0 to 2.5 kg/m ² effectively controlled WSB	Information for Dissemination	1999	PhilRice
Botanical plants against rice black bugs/Mallora - <i>Azaderachta indica</i> (neem seeds) - <i>Dioscorea hispida</i> (oiled carrot) - <i>Tinosphora rumphi B</i> (macabuhay)	Information for Dissemination	1999	DA-CEMIARC
Microbial antagonist against fungal diseases of sweet potato and yam/Palomar, Salamat, Palermo and Edurise - Trichoderma isolates were found to be a promising antagonist	Information for Dissemination	1999	ViSCA
<i>Tricogramma evarescens</i> for corn-borer control/Balbalec/Castillo, Valdez and Parayno	Technologies for Dissemination	1998	DA-RCPC RFU I

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<ul style="list-style-type: none"> - 86% parasitism were obtained - Corn applied with <i>Trichogramma</i> harbored plenty of parasites and predators 			
<p>Management strategies for cotton flower weevil/Solsoloy, David, Damo, Domingo, Julian, Cacayorin, and Bilgera</p> <ul style="list-style-type: none"> - Flower to flower dusting with ash plus burning of shed boils and flowers - August or September planting to avoid occurrence of flower weevil - Close-season planting - Wider row spacing of plants - Planting of trap crops - Proper irrigation management - Release of earwig <i>Euborella annulata</i> - Use of systematic chemical insecticide at the recommended rate 	Technologies for Dissemination	1998	CoDA
<p>Rapid test kit for pesticide residue detection/Tejada</p> <ul style="list-style-type: none"> - Can detect three types of pesticides compounds: organophosphates, carbamates, and pyrethroids - Gave higher level of reliability of results - Can finish analysis in 5 to 30 minutes/sample - Can detect as low as 0.5 µg of pesticide residues/sample 	Information for Dissemination	1998	UPLB
<p>Photocatalysis method for detoxifying pesticide chemical residues or organic contaminants/Paragas, Salazar, Lucas, Santos, Ramos, Abalos and Salapare</p> <ul style="list-style-type: none"> - TiO₂ and exposure to UV light enhanced the photodecomposition of pesticides - The presence of TiO₂ in the soil generally enhanced the release of some macro- and micro-nutrients to the rice crops - Positive interaction was obtained from the organic-inorganic fertilizer combination with TiO₂ 	Information for Dissemination	1998	CLSU
<p>Sustainable management option for utilization in highly diversified and intensified cropping systems/Agustin, Shrestha, Tripathi, Lucas, Pascua Jr., Ladha, Marcos, Culannay, Baga, Bucao, Balasubramanian, Morales and Obien</p> <ul style="list-style-type: none"> - Assessed N management strategies: urea tablet deep placement (UT/DP), spad-based N (SB) using a chlorophyll meter, and farmers' N (FN). UT/PD can be considered a a better management scheme for increasing crop productivity. - Technology of planting nitrogen catch crops after harvest of dry season 	Information for Dissemination	1998	MMSU
Pesticide, food safety and the environment:	Information for	1998	DA-CVLMROS

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socio-cultural, economic concerns and policy adjustment	Dissemination		
Pesticide utilization in agricultural production in Nueva Ecija	Information for Dissemination	1998	NVSIT
Bacterial and fungal antagonists as sources of natural fungicidal compounds for control of seed rot and aflatoxin fungi in corn and peanuts	Information for Dissemination	1998	BPRE
Control of the citrus tristegen virus (CTV) disease in citrus in highland using cross protection by mild CTV isolates/Ochasan	Information for Dissemination	1998	DA-BPI-BNCRDC
Bioassay method for screening natural products from plants/ - <i>Trichoderma harzianum</i> Rifai – effective test organism for antifungal bioassay	Information for Dissemination	1998	SRDI-DMMMSU
Biological control agents against white grubs of sugarcane/Estioko and Bañas - <i>Heterorhabditis</i> (1000/ml distilled water) was infective to <i>Lipidiota</i> and <i>L. irrorata</i> 8 days after inoculation) - <i>Rhabditis</i> (1000/ml distilled water) was effective against <i>L. irrorata</i> and <i>Anomala</i> after 3 days and 8 days of inoculation, respectively	Information for Dissemination	1998	SRA-LGA REC
Diadegma for diamond blackmoth control/Alama, Telmo, Mendoza, Aglubo, Aying and Garcia - Obtained a 451% ROI using the <i>D. semiclausum</i>	Information for Dissemination	1998	DA-WESMIARC
Growth and sporulation of <i>Phytophthora colorcaine</i> R in artificial medium and biological control using microbial antagonists/Palomar - <i>T. viride</i> and <i>Trichoderma</i> spp. From yam showed consistent antagonistic activity - Reduction of percentage infected leaves and disease rating	Information for Dissemination	1998	ViSCA -PRCRTC
Fertilization and storage of multiplier onion/Ibea, Mandac and Yadao - Study the effect of granular and foliar fertilizer, N fertilization (highest ROI in 90-20-20 NPK/ha) and storage (can be stored for 2 months)	Information for Dissemination	1998	DA-ILIARC ROS II
Biological control of <i>Puccinia polypora</i> Cinder (corn rust) with <i>Sphaerellopsis</i> /Paningbatan and Batasa	Information for Dissemination	1997	ViSCA
Management of oriental fruit fly/Manoto - Field sanitation, male annihilation, and sterile insect techniques	Information for Dissemination	1997	PNRI-DOST

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IPM strategies for tobacco/Alimbungen et.al. - Spraying based on economic threshold level (ETL) - Spraying of insecticides on a calendar schedule - IPM (the most economical strategy) - Combined practices under IP resulted in lower insect infestation, least leaf damage at 90 DAT and highest yield and crop value	Information for Dissemination	1997	NTA
Use of tobacco leaf extract to control aphids/Mosura et. al - Effective against aphids in bush sitao and mungbean	Information for Dissemination	1997	PSPC
Promising plant extracts against weeds/Calumpang - 12 plant extracts were tested for herbicidal effect - plants tested could be good sources of organic compounds	Information for Dissemination	1997	NCPC-UPLB
Indigenous biological agents against insect pests of sugarcane/Alba and Rosales - 11 predators, 20 parasites/parasitoids, 2 entomopathogenic nematodes and 1 pathogen identified	Information for Dissemination	1997	SRA-LGAREC
Bt formulation and synthetic pyrethroid for pest control of cabbage/Lewke et. al. - Alternative spraying of three applications of Agree at 40g/16 L and four applications of Karate at 5 tsp/16 L one week after transplanting to one week before harvesting (most effective control)	Information for Dissemination	1997	Bohol - APC
Integrated management approach for clubroot in crucifers/ Mariano et. al - Continuous planting of non-host crops such as potato, carrots, beans, and celery for five cropping seasons reduced clubroot infection and increased harvest by 400%	Information for Dissemination	1997	BPI-BNCRDC
Predators and parasites in coffee-based farming system/Rint and Tepora - 13 natural enemies of insect pests have been collected from coconut, black pepper, lychee, banana, lanzones and coffee; 6 of these feed on major pests of crops in coffee-based farming	Information for Dissemination	1997	DSAC
Management strategies for bacterial wilt of potato: Application of soil amendments/ - Formulated compost - Powdered bleach application - Biological control using antagonistic organisms	Information for Dissemination	1997	BSU-NPRCRTC

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Ethnobotanical knowledge of farmers in Leyte – use of pesticidal plants for control of insect pest - Tubli (<i>Derris</i> sp) - Lagtang (<i>Archangelisi ferva</i> (L.) Mev - Kasla (<i>Croton tiglicum</i> L.)	Information for Dissemination	1997	ViSCA
Neem extracts as biocontrol for mango hopper/Balbalec et. al - Application of 2% seed extract (20 g/l water), 5% leaf extract (50 g/liter water), and combination of 2.5% each of neem seed and leaf extracts (25g/liter water) effectively reduce hopper population ranging from 76 to 94% mortality - At flowering	Technology for dissemination	1996	DA-Pangasinan
Neem seed powder to control borer/Mallilin et.al - corn plants treated with 32 kg neem seed powder/ha mixed with 32 kg sawdust and applied in the whorl at late stage had lower tunnel counts than in control	Information for Dissemination	1996	Iligan Experiment Station
Pesticide residue analysis of water, fish, and soil from selected small farm reservoir (SFR), rice-fish based ecosystems, fish ponds, and streams/Torres, Gutierrez, Salazar and Saturnino <u>Region 2</u> - negative results on the organophosphate pesticide (OP) residue except in some instance - pH of soil samples is slightly acidic to slightly basic - OP residues are detected in samples taken during wet season but not in samples tested during dry season	Information for Dissemination	1996	CLSU
Techniques in producing disease-free planting materials for potato seed tuber production/Gabriel et al. Recommendations: - In vitro multiplication of recommended potato varieties - Exposure of in vitro-grown potato plantlets at high light intensity for higher survival rate - Follow the recommended cultural and management practices - Store potato seed tubers under diffused light	Information for Dissemination	1996	MMSU
<i>Tricogramma chilonis</i> as biological control against cabbage moth, <i>Crocidolomia binotales</i> Zeeler/Madras	Information for Dissemination	1996	ViSCa
Integrated pest management (IPM) of diamondback moth (DBM) in Ilocos Region/Barroga et al.	Information for Dissemination	1996	MMSU

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<ul style="list-style-type: none"> - Utilization of the parasitoid (<i>Cotesia putellae</i>), supplemented with microbial/selective insecticides based on economic threshold level (ETL) 			
Sawdust trap boxes for control of rhinoceros beetle/Aterrado et al.	Technology for Dissemination	1995	PCA-DRC
Mixtures of insecticides for protection of stored maize/Sayaboc et al. <ul style="list-style-type: none"> - Minimum effective dose for two mixtures of insecticides against the lesser grain borer, <i>Ryzopertha dominica</i> (pirimiphos methyl + deltamethrin + piperonyl butoxide and fenitrothion + fenvalerate + piperonyl butoxide) 	Technology for Dissemination	1995	NAPHIRE
Biology and control of lanzones bark borer for farmers' awareness/Abad	Information for Dissemination	1995	DA-BPI-DNCRDC
Control of durian fruit borer/Lumbao & Abragado <ul style="list-style-type: none"> - Insecticide application and recommended rates of Cypermethrin, Deltamethrin and Carbaryl lower incidence of fruit borer infestation - Bagging reduces borer infestation to 9.20%. Early bagging is impractical - Deltamethrin and bagging shows least of infestation 	Information for Dissemination	1995	DA-CEMIARC
Nonchemical integrated pest management (IPM) for rainfed lowland rice/Alpuerto et. al <ul style="list-style-type: none"> - rice planting once a year followed by several crops planted at the same time or one after the other - supplementary irrigation during rice establishment in the lowland environment of the area - planting of two or more varieties that differ in tolerance and / or resistance to insect pest and diseases. - Fertilizer and insecticide application. If there's low pest outbreak, insecticide application is not necessary 	Information for Dissemination	1995	MMSU
Biological control of cassava red spider mite (<i>Tetranychus kanzawai</i> Kishida)/Vasquez and Gonzales <ul style="list-style-type: none"> - Utilization of predatory mites 	Information for Dissemination	1995	ViSCA
Relay cropping with tomato to control fungal diseases in garlic/Abrina <ul style="list-style-type: none"> - reduces the infection of Cercospora leaf spot and purple blotch of garlic - also increases the income of garlic farmers by ₱ 58,704.54/ha from garlic and tomato harvests. 	Information for Dissemination	1995	MMSU

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IPM for DM in the lowland/Baroga et. al - use of parasitoid Kurdj supplemented by spraying of microbial insecticide based on economic threshold level (ETL) - use of parasitoid reduces the number of insecticides sprayings from 24-36 time to 2-3 times per cropping and obtains comparable yield	Information for Dissemination	1995	MMSU
IPM for bacterial wilt in tomato/Garcia and Infanta - use of well-rotted and dried chicken dung applied at 0.5 kg/hill, Furadan, and moderately resistant tomato variety adapted to lower elevations	Information for Dissemination	1995	SMIARC
Insects associated with crops in multiple cropping system/Rint - survey of pests in DSAC-SAKA's 10-hectare area planted to coconut, coffee, guayabano, banana, rambutan, papaya, lanzones, guapple, jackfruit, cacao, perante orange, and citrus	Information for Dissemination	1995	DSAC