COLEACP – PIP PROGRAMME

Financed by the European Union

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What is COLEACP-PIP?

A European Cooperation Program For The ACP Horticultural Industry

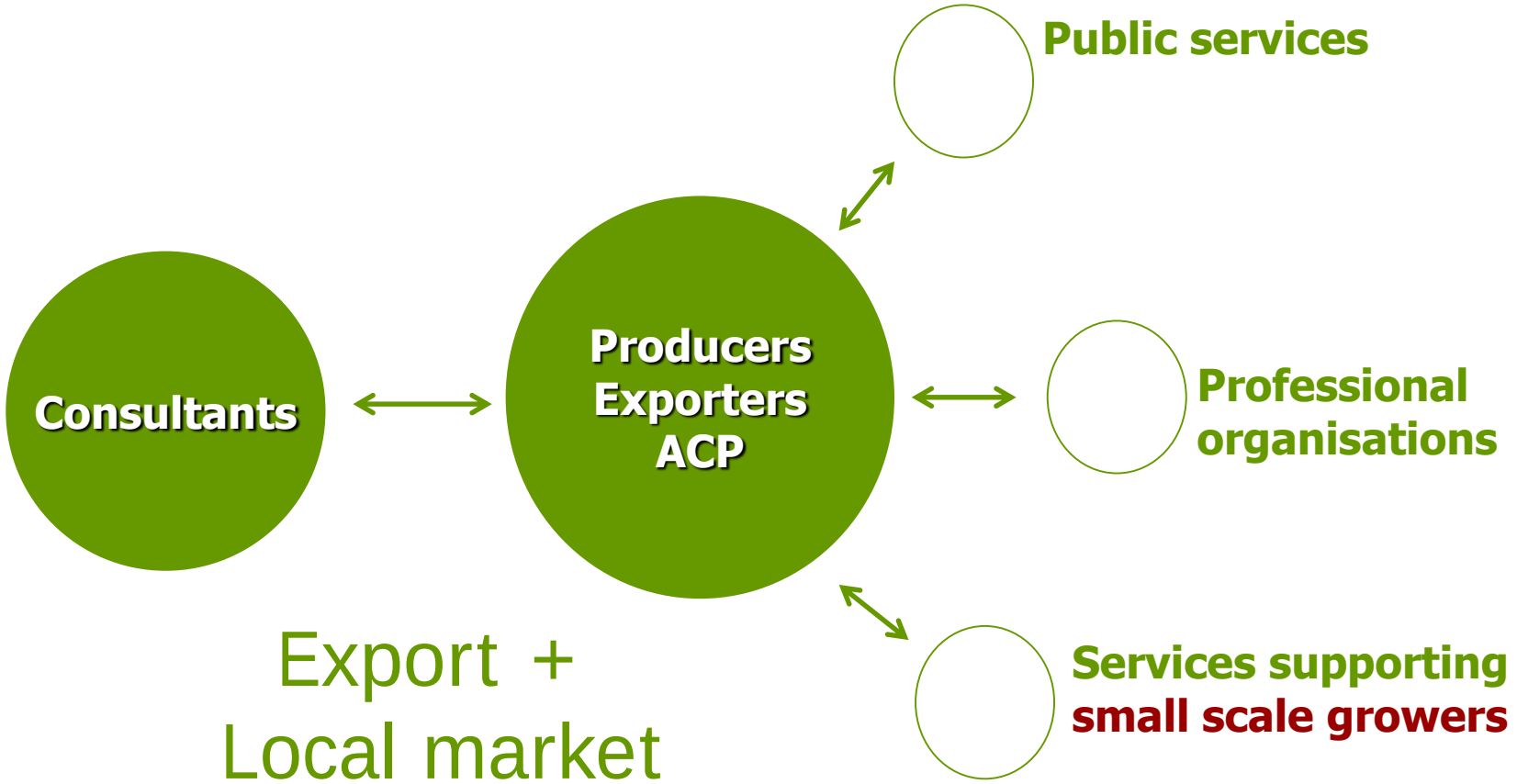
- Started in 2001. PIP Phase 2 launched in 2009
- Managed by COLEACP, an association for ACP (African-Caribbean-Pacific) exporters and EU importers of horticultural produce
- Funded by European Development Fund

What is COLEACP-PIP?

A European Cooperation Program For The ACP Horticultural Industry

- An initiative for safe and sustainable trade & food
- Technical assistance to the ACP horticultural industry
- Mainly demand driven actions
- Towards minimal pesticide residues

PIP beneficiaries



Market access Component:
R&D and Regulation

- Disseminating Good Practices
  Crop Protocols and Guides published
  - Promote integrated pest management (IPM) strategies
  - Ensure minimal pesticide residues
  - Sustainable production and sound to the environment

Crop protocols & Guides to Good Plant Protection Practices

- 38 drafted by external consultant & PPP manufacturers
- Completed with data from PIP residue trials

Avocado	Amaranth	Baby-brassica
French bean	Lettuce, spinach + others baby-leaf	Baby-leek
Snow pea	Eggplant	Ginger
Tomato	Peppers	Sweet potato
Papaya	Melon	Cassava
Mango	Cucumber + cucurbits edible peel	Yam
Pineapple	Watermelon + butternut	Litchi
Okra	Baby-corn and sweet corn	Coconut
Passion fruit	Baby-carrot	Banana
		Potato

- New: onion/garlic/shallot, citrus, guava, tamarillo

Supporting BCA
R/D-Regulation-Capacity building

Support to develop Plant Protection

Products with zero residues and sound to the environment

- Initiated contacts with BCA companies in 2011 to find solutions for the beneficiaries of the program. Now good contact with 15 companies
- Efficacy trials on BCA implemented in Ghana, Côte d'Ivoire, Senegal, Kenya, Mali and Burkina
- Revision of national/regional regulation and staff capacity building
- Building capacity of BCA manufacturers in ACP countries

Supporting BCA Research & Development

Efficacy trials implemented

- Exploratory trials
- On papaya, mango, pineapple, avocado, passion fruit, okra, lychee, eggplant, head cabbage, tomato, chili, sweet pepper, cucumber.
- Products from Agraquest(Bayer), Agrilife, Arysta, Beckerunderwood, BASF, Biophytech, Brandt, CAI, Champon Millenium, Futureco, Gowan(Ecoflora), Louis Dreyfus Com., Nico Orgo, Novasource, Oro Agri, Real IPM, Riverbiosciences, Senchim, Sineria

Supporting BCA
Overview of trials implemented

Supporting BCA
Trials implemented

Crop Pest/disease	Agents tested	Results
Mango Fruit fly (*Bactrocera invadens*)	▪ Calcined kaolin ▪ Food attractants or parapheromone and insecticides in bait station ▪ Orange extract ▪ Liliaceae and Solanaceae extracts ▪ Propylene glycol alginate	+++ +++ +(+) + (attract?) +
Mango Anthracnose and others post harvest diseases	▪ Citrus extract + L-free amino acids ▪ *Trichoderma viride* ▪ Bacteria ▪ *Rheum officinale* and *Rumex crispus* extracts	/ / / /
Lychee Alternatives to sulphur	Organic acids 	++

Supporting BCA
Trials implemented

Crop Pest/disease	Agents tested	Results
Avocado *Cryptophlebia*	▪ Liliaceae and Solanaceae extracts ▪ Granulovirus	/ /
Papaya Mealybug	▪ Petroleum oil ▪ Neem extract ▪ *Verticilium lecanii* ▪ *Beauveria bassiana*	+++ +++ ++ ++
Pineapple Mealybugs	▪ Propylene glycol alginate ▪ Petroleum oil ▪ *Verticilium lecanii* ▪ Plant extract ▪ Neem extract	+ +(+) + +(+) +(+)

Supporting BCA
Trials implemented

Crop Pest/disease	Agents tested	Results		
Passion fruit Alternaria fruit spot 	▪ *Trichoderma harzianum* + *Trichoderma koningii* ▪ Orange extract ▪ Citrus extract + L-free amino acids ▪ *Trichoderma asperellum* ▪ *Bacillus subtilis* ▪ *Rheum officinale* and *Rumex crispus* extracts ▪ Bacteria	++(+) +++ +++ +++ +++ ++(+) +++		
		Broad mite	Aphids	Whitefly
Sweet pepper	▪ Prosular oxymatrine ▪ Propylène glycol alginate ▪ Plant extract ▪ Neem extract	+ - - -	+++ - ++ -	+++ + - +

Supporting BCA
Trials implemented

Crop Pest/disease	Agents tested	Results
Okra Aphids, leafhoppers, whiteflies	▪ *Beauveria bassiana* ▪ Propylene glycol alginate ▪ Orange extract ▪ Plant extract ▪ Allyl Isothiocyanate and Capsaicin	/ / / / /
Tomato *Helicoverpa armigera*	▪ Prosular oxymatrine ▪ Propylene glycol alginate ▪ Neem extract ▪ Plant extract	+++ +++ +++ +++
Head cabbage Aphids	▪ Prosular oxymatrine ▪ Propylene glycol alginate ▪ Neem extract	++(+) ++(+) ++(+)

Supporting BCA
Trials implemented

Crop Pest/disease	Agents tested	Results	
Cucumber Fruit fly	▪ Calcined kaolin ▪ Orange extract ▪ *Beauveria bassiana* ▪ Neem extract	+++ + ++ +++	
		Aphids	Leaf miner
Cucumber Aphids	▪ Plant extract ▪ Orange extract ▪ *Beauveria bassiana* ▪ *Neem extract*	++ ++ ++ ++	+ - + +

Supporting BCA
Trials implemented

Crop Pest/disease	Agents tested	Results
African eggplant	▪ Plant extract ▪ Prosular oxymatrine ▪ Propylene glycol alginate ▪ Neem extract	Spider mite Broad mite Leafminer Leafhopper /
Chili Fruit fly	▪ Calcined kaolin ▪ Orange extract ▪ *Beauveria bassiana* ▪ Neem extract	/ / / /

Supporting BCA
Trials in progress/planned

Trials planned or in progress	Crops	Agents to be tested
Nematodes	Butternut (Senegal) Pineapple (RCI)	▪ Propylene glycol alginate ▪ Essential oil of *Pedalaceae* ▪ Oil from wild plant seeds ▪ Chili and mustard extracts
Thrips	French beans (Kenya)	▪ *Metarhizium anisopliae* ▪ *Isaria fumosoroseus* ▪ Prosular oxymatrin ▪ Plant extract ▪ Pyrethrum
Mites	Papaya (Ghana)	▪ Detergent + mineral oil + terpenoids ▪ Propylene glycol alginate ▪ *Metarhizium anisopliae* ▪ Prosular oxymatrin ▪ *Isaria fumosoroseus* ▪ Mineral oil

Supporting BCA
Trials in progress/planned

Trials planned or in progress	Crops	Agents to be tested
Xanthomonas citri* pv. *mangiferaeindicae	Mango (RCI)	▪ Propylene glycol alginate ▪ Plant extract ▪ *Rheum officinale* and *Rumex crispus* extracts
Fruit fly	Mango (Senegal)	*Metarhizium anisopliae*
***Thielaviopsis* and other post-harvest diseases**	Pineapple (Cameroon)	Not yet selected
Thrips	Onions (Burkina)	Not yet selected

Registration of BCA
Africa (excepted RSA and Kenya)

BCA	Country (or harmonized system)	Crop (pest/disease)
Bacillus thuringiensis	CSP (9 Sahelian countries) Cameroon, Côte d'ivoire	Cabbages/vegetables (caterpillars)
Attract (ME) and kill (deltamethrin)	CSP (9 Sahelian countries)	All crops (fruit fly)
Thyme and marigold oils	CSP (9 Sahelian countries)	Tomato (whiteflies)
Protein hydrolisat + spinosad	CSP (9 Sahelian countries) Côte d'Ivoire	Mango (fruit fly)
Mineral oil	Cameroon	Banana (Cercosporia + insects)
Ascorbic acid	Côte d'Ivoire	Pineapple (post-harvest)
Sordidine	Côte d'Ivoire	Banana (weevil)

Registration of BCA
Kenya - Microbials

BCA	Crops (pest or disease)
Pseudomonas fluorescens	Tomato (Botrytis, Septoria & Sclerotonia)
Verticillium lecanii	French beans/tomato (aphids, whiteflies)
Bacillus thuringiensis	Vegetables (caterpilars)
Paecilomyces lilacinus	Tomato, French beans (nematodes)
Trichoderma harzianum	French beans (root diseases)
Trichoderma asperullum	French beans (root diseases)
Beauveria bassiana	French beans/snow peas (aphids, thrips, whiteflies) Cabbages (aphids, Plutella)
Ampelomyces quisqualis	Snow peas/courgette (powdery mildew)
Helicoverpa armigera SNPV	Tomato (African bollworm)

Registration of BCA
Kenya - Invertebrates

BCA	Crops (pest or disease)
Diglyhus isaea	Vegetables (Liriomyza)
Encarsia formosa	Vegetables (whiteflies)
Amblyseius californicus	Vegetables (spider mites)
Aphidius transcaspinus	Vegetables (aphids)
Phytoseiulus persimilis	Vegetables (spider mites)

Registration of BCA
Kenya - Others

BCA	Crops (fruits and vegetables)
Ascorbic acid	French beans (biostimulant)
Attract (ME) and kill (malathion)	Mango (fruit fly)
Pyrethrins	Vegetables (aphids, whiteflies)
Azadirachtin	Vegetables (insects and nematodes)
Oxymatrine	Tomato (aphids, spidermites)

BCA Registration in ACP countries
How to go forward ?

Why BCA ?

- MRL compliance difficult for small growers
- Better protection of environment and health of the growers

How to boost BCA registration ?

- Special fast track procedures ?
- Revision of national/regional regulation ?
- Set a kind of IR4 project/agency ?

How to reinforce use of BCA by the growers ?

- Demonstration plot/pilot projects ?
- Information ?
- Training ?

Supporting Development of BCAs

COLEACP-PIP - Active partner in the development & registration of new BCAs for the ACP horticultural industry

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Thank you for your attention