



Summary achievements of Costa Rica HHP project 2015-2017

The SAICM-funded QSP project on *Highly Hazardous Pesticides phase out and alternatives in Costa Rica* is coordinated by the Regional Institute for Research on Toxic Substances (IRET) at the National University (UNA).

Project objectives and key results

Objective 1. Identify pesticides and use patterns which can be considered Highly Hazardous in the Costa Rican context, using a life cycle approach

IRET compiled detailed, up to date information on HHP use and practices, volumes and hazard profiles in 2 key export crops. Key findings:

- 79% of pesticide volumes imported into Costa Rica between 1980-2012 qualify as HHPs
- In 2015, over 10,000 tons of HHP active ingredients were imported
- Of 176 active ingredients imported in 2015, 109 are HHPs (62%)

The most important HHPs imported (by volume) in 2015 were:

Active ingredient	Pesticide type	% of HHP imports	HHP hazard criteria*
mancozeb	fungicide	36	<i>Chronic</i> : Probable carcinogen (US EPA)
glyphosate	herbicide	12	<i>Chronic</i> : Probable carcinogen (IARC)
chlorothalonil	fungicide	6	<i>Acute</i> : Fatal by inhalation (GHS) <i>Chronic</i> : Probable carcinogen (US EPA)
paraquat	herbicide	6	<i>Acute</i> : Fatal by inhalation (GHS)
diazinon	insecticide	5	<i>Chronic</i> : Probable carcinogen (IARC) <i>Environmental</i> : Highly toxic to bees (US EPA)
diuron	herbicide	4	<i>Chronic</i> : Probable carcinogen (US EPA)
ethoprophos	nematicide	4	<i>Acute</i> : Extremely hazardous (WHO 1a) + Fatal by inhalation (GHS) <i>Chronic</i> : Probable carcinogen (US EPA)

* using PAN International HHP List hazard criteria (version 2015)

Objective 2. Engage government agencies, the agriculture sector and NGOs in development of a joint national HHP Risk and Use Reduction Plan.

The project team engaged positively on HHP issues with the multi-stakeholder National Secretariat for Chemicals Management, convened by Costa Rica's relevant Ministries. In June 2016, the government published plans for setting up a National Policy for Chemicals Safety. IRET and PAN Costa Rica succeeded in obtaining seats in the stakeholder working group to develop the content of this new policy, placing them in a good position to advocate strongly for commitments and actions on HHP reduction and alternatives.

Objective 3. Raise awareness of the FAO/WHO HHP approach and of short-term actions to reduce risks, with training of smallholder farmer organizations.

HHP training and awareness events and publications have been delivered for coffee and pineapple farmers, farm workers, extension staff, researchers, students and commodity

sectors. Important messages disseminated:

- The majority of pesticides used in Costa Rica qualify as HHPs, not only those that carry the Red (“extremely hazardous”) label under the harmonised Central American regional colour coding system. More users now understand that HHPs can also present chronic human health and environmental hazards.
- It is possible to reduce risks from HHPs by use of suitable protective equipment and safety measures but exposure and risks can never be eliminated. For this reason, phasing out HHP use is the most effective method to reduce harm, replacing these with safer alternatives based on agroecological science.

Objective 4. Identify potential alternative pest management options for prioritised HHPs and trial the most feasible with a network of pilot farms for IPM.

Pineapple production

HHP nematicide ethoprophos for control of root-feeding nematodes was identified as a priority for alternatives. Trials were conducted in 2015-16 at one location, testing alternatives based on biofungicides and ‘wood vinegar’¹.

- Pilot trial found no significant difference in nematode infestation between treatments, albeit at very low nematode levels
- Plant weight was significantly lower in plots treated with ethoprophos, suggesting harmful side-effects on soil organisms needed for growing a healthy crop
- Alternatives are much cheaper than ethoprophos and can be applied without special equipment or extensive training

Coffee production

HHP fungicides, notably epoxiconazole, for control of coffee rust disease were identified as a priority for alternatives. Trials were conducted in 2016 at two farms, testing alternatives based on traditional mineral mixtures, biofungicides, botanical products and reduced dose non-HHP fungicides².

- Pilots suggest that non-HHP alternatives can deliver good yields in fields with medium and low disease levels. Neither HHPs nor alternatives controlled high disease levels.
- For conventional growers, combining one or more non-chemical alternatives with reduced-rate application of non-HHP fungicides is a feasible and affordable option. The mineral plus biofungicide treatments are more suitable for organic farms.

Objective 5. Review project results, share lessons and develop recommendations for follow-up actions and funding proposals for medium-term implementation.

Findings have been shared with the international chemicals conventions, sustainability standards and UK supermarkets. The regional coffee workshop held forms a first step in setting up an informal Community of Practice of producers and technical support organisations active in phasing out HHPs and replacing these with agroecological practices.

For more info see: <http://www.pan-uk.org/phasing-out-hhps-costa-rica/> Summaries of the workshops will be available in English later in 2017.

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¹ See Project briefing 2: Exploring alternatives to HHP nematicides in pineapple (PAN UK, 2017)

² See Project briefing 3: Exploring alternatives to HHP fungicides for coffee rust disease (PAN UK, 2017)