

The Case Study of Ghana

“AWARENESS CREATION ON THE EFFECTS OF PERSISTENT ORGANIC POLLUTANTS (POPS) AMONGST VEGETABLE FARMERS IN THE ACCRA METROPOLIS”

Vegetables on the market



The problem

- ▣ There is the widespread use of agrochemicals in agriculture in Ghana.
- ▣ Presence of high levels of organochlorine pesticides, including banned products.
- ▣ Commonly used pesticides include lambda-cyhalothrin, carbofuran, thiothanate-methyl, chlorpyrifos, and cupric hydroxide.

The problem cont'd

- ▣ A survey carried out by the Ecological Restorations in 2004 at the Weija Irrigation site (one of the major vegetable production centres for Accra) found that some banned chemicals were used.
- ▣ Project found that 45 per cent of the vegetable farmers in the area had developed chronic skin diseases.

Some farmers at work



Problem cont'd

- ▣ Run-off water from the vegetable farms enters the Okurudu River which empties itself into the Nyanya lagoon – a major fishing and salt mining area in Accra.
- ▣ Use of pesticides is to overcome the resistance to insecticides.

Polluted waterbody



Approach

- A scientific analysis to establish the presence of POPs contamination in vegetables being produced and sold on the Accra market.
- Creation of awareness amongst the Ghanaian vegetable farmers and consumers especially those in the Accra Metropolis on the level of POPs contamination and ways to minimise the use of POPs.

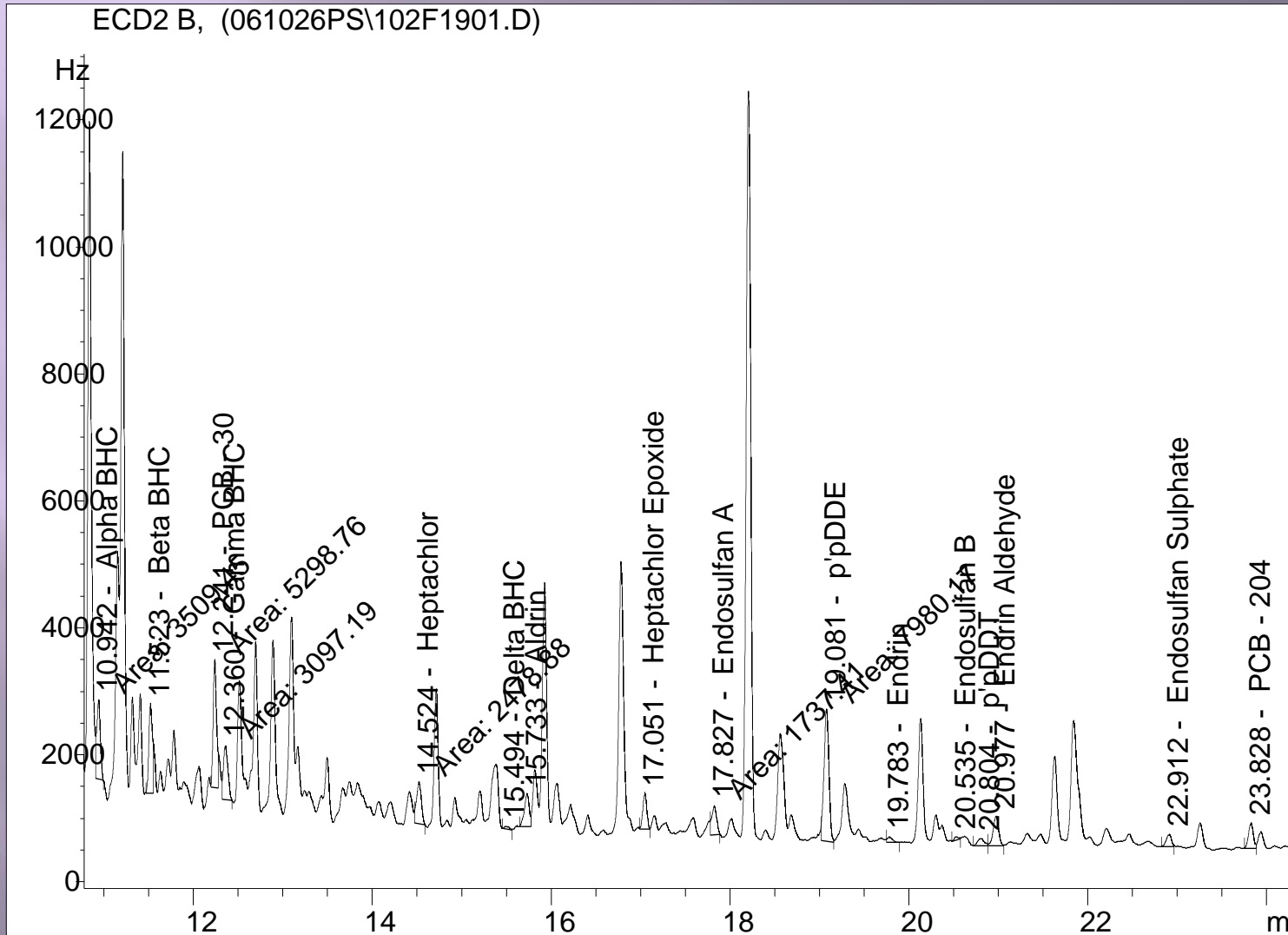
Approach cont'd

- ▣ Introduction of the farmers to integrated pest management in vegetable production.

Outcomes

- ▣ Documentary evidence of the traces of POPs in vegetable production prompted policy makers to reinforce the chemical monitoring team on the local borders to improve the control of banned chemicals, and refresher courses on the identification detection and destruction of banned chemicals were provided to border control staff.

Chromatogrph of tomatoes from Nsawam



Pesticides in Tomatoes from various sources in Ghana (mg/kg)

Pesticides in Tomatoes from various sources in Ghana (mg/kg)

sample	Source	Purchasing Point	Alpha BHC	Beta BHC	Gam BHC	Hepta-chlor	Delta BHC	Aldrin	Hept Epo	Alpha Endo	Dieldrin	DDE	Endrin
Tomato	Kumasi	Buulu Djaano	0.0036	0.0541	0.2659	0.0124	0.0180	<0.0001	0.0003	0.0014	0.0019	0.0540	0.0004
Tomato	Navorongo	Buulu Djaano	0.0032	0.0850	0.1343	0.0027	0.0238	0.0007	0.0026	0.0006	0.0057	0.0850	0.0003
Tomato	Agogo	Maamobi Market	0.0037	0.0808	0.1183	0.0098	<0.0001	0.0007	0.0010	0.0002	0.0108	0.0808	0.0012
Tomato	Akumadan	Mallam Atta Mkt	0.0077	0.0137	0.1254	0.0112	<0.0001	0.0089	0.0016	0.0006	0.0206	0.0138	<0.0001
Tomato	Angloga	Mallam Atta Mkt	0.0036	0.0854	0.2869	0.0467	<0.0001	0.0008	0.0229	0.0009	0.0038	0.0854	0.0012
Tomato	Ada	Agbogboloshi Mkt	0.0011	0.1268	0.2855	0.0185	0.3970	0.0007	0.0067	0.0010	0.0201	0.1267	0.0007
Tomato	Nsawam	Agbogboloshi Mkt	0.0006	0.2322	0.3051	0.0055	0.0510	0.0017	0.0029	0.0012	<0.0001	0.2323	0.0008
Tomato	Keta Angloga	Agbogboloshi Mkt	0.0005	0.5067	0.1451	0.0353	<0.0001	0.0006	0.0075	<0.0001	<0.0001	0.5068	0.0002
WHO Guideline Values (ppm)			0.002	0.002	0.002	0.0001	0.002	0.00003	0.0001	0.00003	0.00003	0.001	0.0006

Pesticides in Lettuce, Cabbage and Cauliflower from various places in Ghana (mg/kg)

Pesticides in Lettuce, Cabbage and Cauliflower from various places in Ghana (mg/kg)

sample	Source	Purchasing Point	Alpha BHC	Beta BHC	Gam BHC	Hepta-chlor	Delta BHC	Aldrin	Hept Epo	Alpha Endo	Dieldrin	DDE	Endrin	Beta Endo	DDT	Endrin Aldehyde	Endo Sulph
Lettuce	Lashibi	Maamobi Market	0.0016	0.0912	0.1073	<0.0001	0.0264	0.0021	0.0008	0.0002	<0.0001	0.0912	0.0047	<0.0001	0.0022	0.0177	<0.0001
Lettuce	Aburi	Mallam Atta Mkt	0.0034	0.3078	0.2283	0.0124	0.0187	0.0018	0.0012	<0.0001	0.0068	0.3078	0.0028	<0.0001	0.0024	0.0223	<0.0001
Lettuce	Kumasi	Agbogboloshi Mkt	0.0021	0.0835	0.1731	0.0207	0.0417	<0.0001	0.0037	<0.0001	0.0051	0.0835	0.0019	0.0027	0.0021	0.0271	<0.0001
Lettuce	Aburi	Buulu Djaano	0.0008	0.5704	0.0552	0.0074	0.0037	0.0010	0.0006	<0.0001	0.0019	0.5704	0.0006	<0.0001	0.0002	0.0039	<0.0001
Cabbage	Weija	Weija	0.0010	0.8327	0.1149	0.01568	0.0036	0.0018	0.0021	0.0012	0.0019	0.8237	0.0005	<0.0001	0.0005	<0.0001	<0.0001
Cabbage	Aburi	Maamobi Market	0.0002	0.1085	0.4168	0.0115	0.0047	0.0003	0.0009	<0.0001	0.0045	0.1086	0.0002	<0.0001	0.001	<0.0001	<0.0001
Cabbage	Kumasi	Mallam Atta Mkt	0.0002	0.2242	0.0989	0.0163	<0.0001	0.0003	0.0004	<0.0001	0.0010	0.2242	0.0003	<0.0001	0.0009	<0.0001	<0.0001
Cabbage	Techiman	Agbogboloshi Mkt	0.0045	1.228	0.2800	0.2331	0.0307	0.0055	0.0256	<0.0001	<0.0001	1.2278	0.3129	0.0525	0.0494	0.0445	<0.0001
Cabbage	Aburi	Buulu Djaano	0.0018	0.0597	0.0635	0.0200	0.0383	0.0009	0.0003	<0.0001	<0.0001	0.0597	0.0004	<0.0001	<0.0001	<0.0001	<0.0001
Cauliflower	Lashibi	Maamobi Market	0.0002	0.0218	0.0067	0.0022	0.0027	0.0001	0.0090	<0.0001	0.0007	0.0218	0.0003	0.0005	<0.0001	0.0010	<0.0001
Cauliflower	Aburi	Mallam Atta Mkt	0.00025	0.0161	0.0412	0.0074	0.0009	0.0010	0.0054	<0.0001	0.0016	0.0162	0.0004	<0.0001	0.0012	0.0044	<0.0001
Cauliflower	Aburi	Buulu Djaano	0.0006	0.1150	0.0300	0.0123	0.0005	0.0006	0.0026	<0.0001	0.0008	0.1150	0.0004	<0.0001	0.0007	<0.0001	<0.0001
WHO Guideline Values (ppm)			0.002	0.002	0.002	0.0001	0.002	0.00003	0.0001	0.00003	0.00003	0.001	0.0006	0.00003	0.001	-	0.00003

Outcomes

- ▣ The Ministry of Food and Agriculture (MoFA) in collaboration with the Ghana Agricultural Inputs Dealers Association identified and disposed 71 tonnes of obsolete stocks of pesticides (mostly aldrin and monocrotophos).
- ▣ The CSIR is looking for funds to repeat the project on a national scale.

Outcomes

- Collaborative work among governments, IGOs, research and academic institutions, communities, on elimination of illegal trade in chemicals, use of POPs and adoption of organic farming including a national network on POPs and a more active role of farmers in development of national policies and the review regulatory frameworks.

Lesson learned

- Local farmers are relatively better off when they use IPM in vegetable production.
- Lack of effective market for organic products discourages farmers to invest in organic farming.
- The NGOs and community-based organizations can make significant contributions in programme implementation and reporting as they have the trust of communities.

Lesson learned

- The impact of NGOs on the sound management of chemicals NGOs can be strengthened through:
 - greater government recognition of their potential contribution,
 - improved access to technical, financial, training and policy support,
 - strengthened coordination, collaboration and communication between different stakeholders (researchers, academia and policy makers).

The Way Forward

- Farmer education and agricultural extension promotes the adoption of integrated pest management and organic agriculture to minimise the use of pesticides.
- Markets of organic produce are strengthened.
- Guides to chemical conventions are made available in local languages and disseminated, and community-based organisations, extension staff and farmers trained on how to implement them at the grassroots level.

@ the end of the day



Message

Eat well, avoid

POPs!

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