

PESTICIDES & BEES

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Registrar



MINISTRY OF HEALTH

FUNCTIONS OF THE PESTICIDES CONTROL AUTHORITY

1. Registration of pesticides
2. Approval of each pesticide import shipment
3. Licensing & monitoring of:
 - i. pesticide importers,
 - ii. local manufacturers,
 - iii. stores selling restricted pesticides,
 - iv. pest control companies & certification of their pest control applicators

FUNCTIONS OF THE PESTICIDES CONTROL AUTHORITY

5. **Testing** pesticide quality (% active ingredient)
6. **Testing** for pesticide residue in imported and local produce
7. **Public education on pesticide safety**
8. **Training** professionals in pesticide safety:
 - i. Pest Control Applicators
 - ii. farmers

PESTICIDE REGISTRATION

Applicant submits a dossier of information, including:

- Toxicity data
- Ecotoxicity data (bees, fish, birds, etc.)
- Proposed uses (crops, target pests, etc.)
- MSDS & proposed label

Dossier is evaluated by internal & external assessors based on the conditions of use expected in Jamaica

Submitted to PCA Board for possible approval

Registration for 5 years

May be re-assessed by Pesticides Review Committee within that time

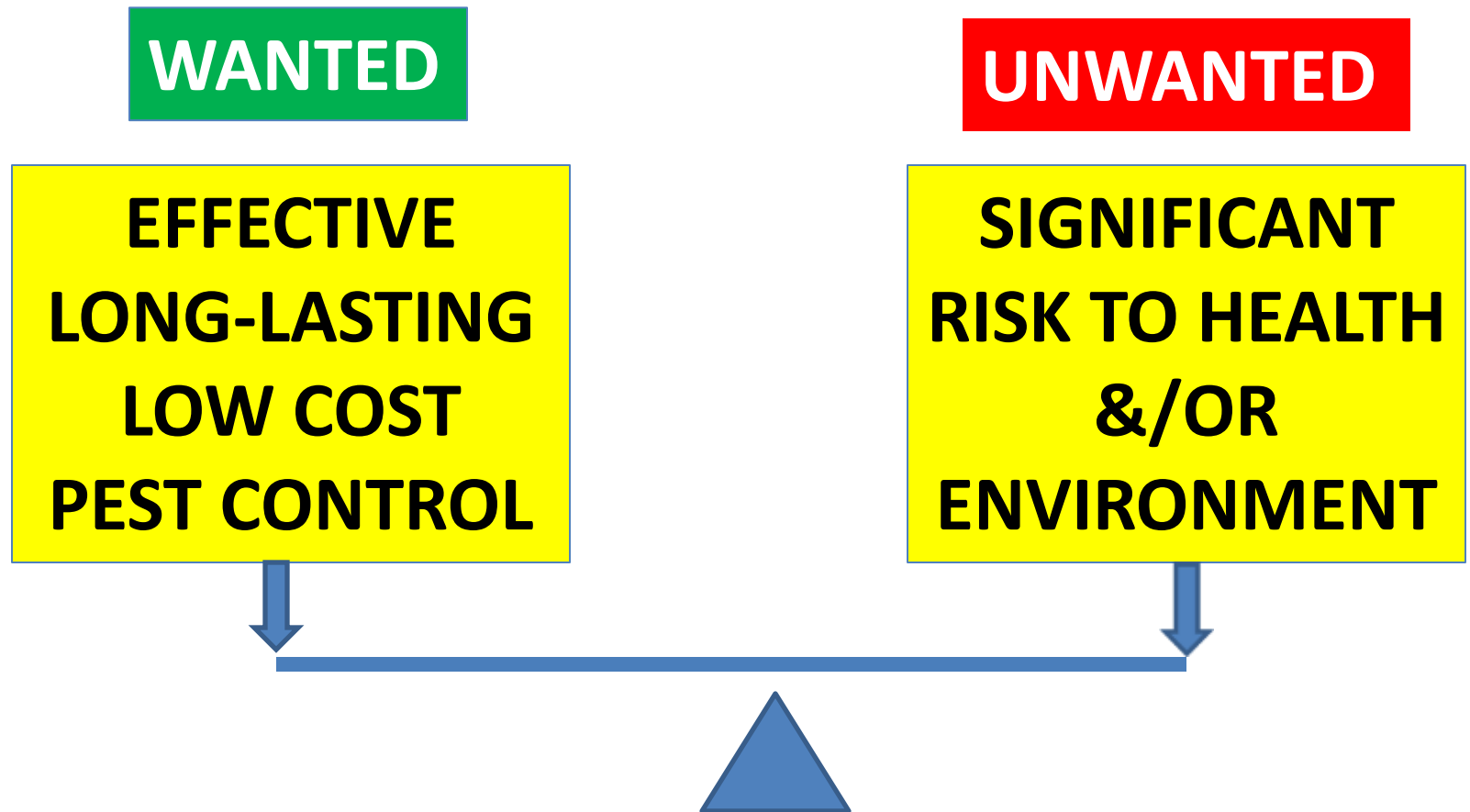
PESTICIDES REVIEW COMMITTEE

Review of selected pesticides based on scientific data (not anecdotal).

Possible recommendations to PCA Board:

- No change in pesticide registration/use
- Change label to warn users
- More restrictions
- Phase out

BALANCE IN PESTICIDE USE



COMPARISON WITH OTHER COUNTRIES

Europe, US

- **Hugh fields**
- **Mono-cropping**
- Aerial spraying often used (spray drift)
- **Moderate-cool climate**

Jamaica

- **Small fields**
- **Mixed cropping esp. vegetables**
- Ground spraying (less drift)
- **Hot tropical climate**

COMPARISON of NEONICOTINOIDS USE

Europe, US

- Neonicotinoids used mainly as seed treatment
- Cost considerations not as critical

Jamaica

- Neonicotinoids mainly as spray application to foliage
- High cost deters farmers from use

FARMERS & PESTICIDE USE

FARMERS DO NOT WANT TO USE PESTICIDES

- Pesticides are expensive and require expensive mechanical equipment to apply
- Pesticides take a lot of effort to purchase, transport, mix and apply
- **Most small farmers have limited funds to purchase pesticides - this restricts their use of pesticides**
- **Many farmers do not accurately measure the amount of pesticide needed and do not calibrate resulting in under/over application**

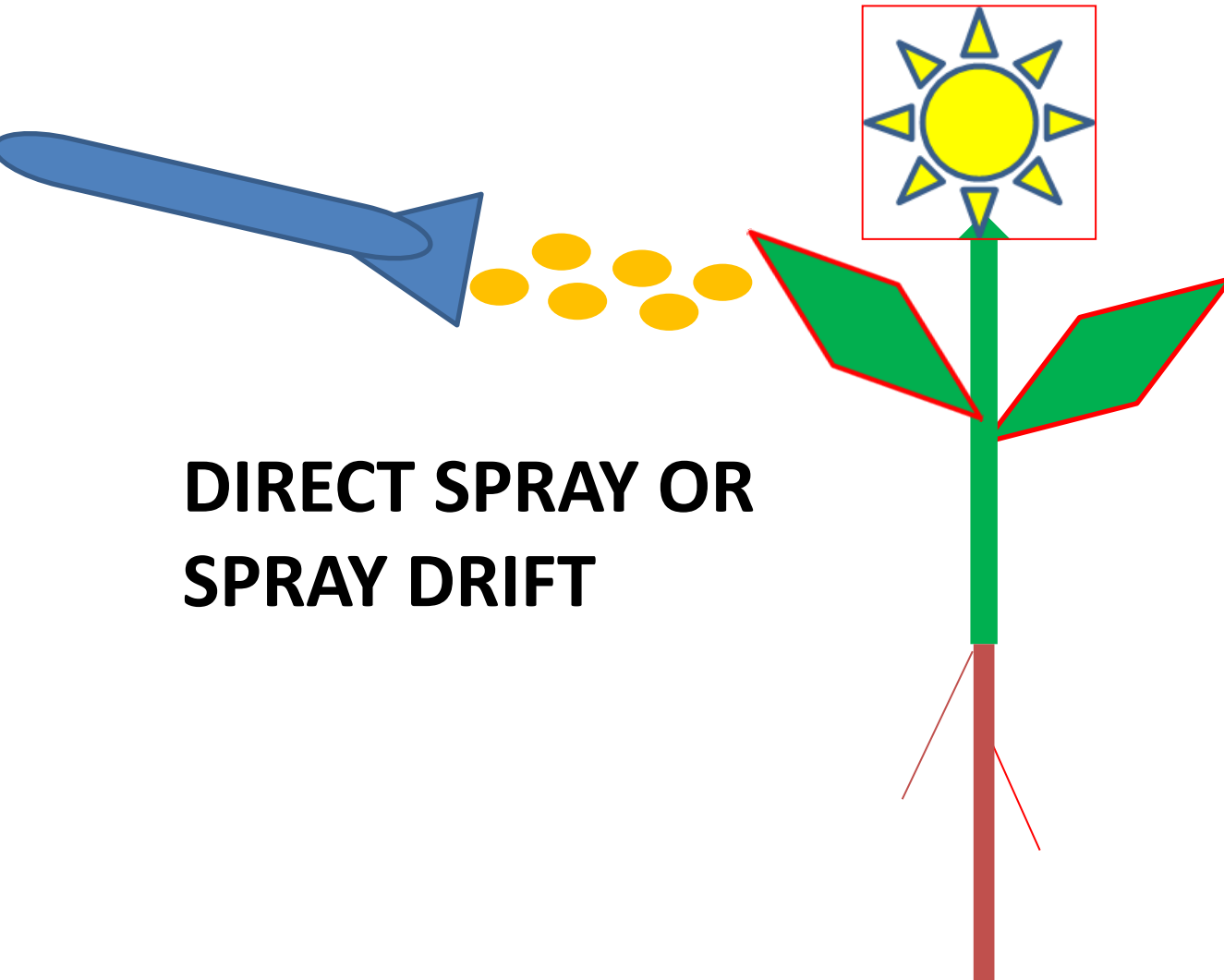
PESTICIDES BREAK DOWN

- **HEAT**
- **SUNLIGHT** 
- **LIVING ORGANISMS**
 - **MICRO-ORGANISMS**
 - **PLANTS**
 - **ANIMALS (INCLUDING BEES)**

PESTICIDE RESISTANCE

- **IN ANY POPULATION, SOME INDIVIDUALS WILL BE MORE RESISTANT THAN MOST**
- **WITH SELECTION PRESSURE FROM A PESTICIDE, THESE INDIVIDUALS WILL MULTIPLY**
- **AND THE POPULATION WILL USUALLY SURVIVE,**
- **THOUGH AT A LOWER LEVEL**

PESTICIDES IN NECTAR & POLLEN

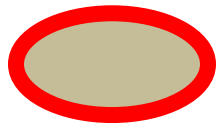


**DIRECT SPRAY OR
SPRAY DRIFT**

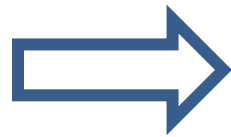


**BEES COLLECT
NECTAR &
POLLEN
CONTAINING
PESTICIDES**

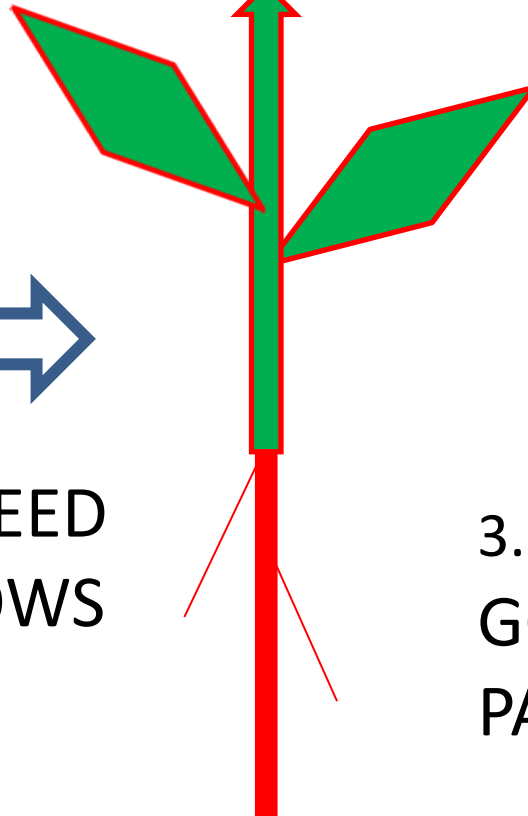
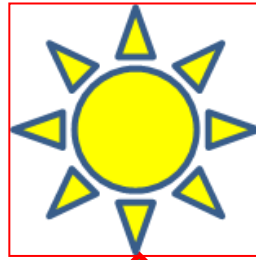
NEONICOTINOID INSECTICIDES



1. SEED COATED WITH **NEONICOTINOIDS** IS PLANTED



2. SEED GROWS



3. **NEONICOTINOIDS** GOES TO ALL PLANT PARTS TO KILL PESTS



4. BEES COLLECT NECTAR & POLLEN CONTAINING **NEONICOTINOIDS**

PESTICIDES & BEES

- ARE THOSE FLOWERS CONTAMINATED WITH PESTICIDES BEING VISITED BY BEES?
- ARE THE FLOWERS BEING VISITED BY BEES CONTAMINATED WITH PESTICIDES?
- IS THE LEVEL OF CONTAMINATION A PROBLEM?



NEONICOTINOIDS RESEARCH PROPOSAL

- How much neonicotinoids are being imported and what active ingredients?
- Where are these pesticides being used and on what crops? Hives?
- Testing of honey & bee bread from the main producing areas
 - Screening for all pesticides
 - Quantifying whatever is found

NEONICOTINOIDS RESEARCH PROPOSAL

- Funding is needed, especially for laboratory analysis of 150 samples of honey & bee bread
- Assistance being sought from DOW & Syngenta, main manufacturers of neonicotinoids
- Some researchers will be giving their expertise without charge to the project

