Introduction

- Pesticides, an indispensable tool in farming
- Chemical pesticides such as the Bordeaux mixture have been used for control of various pests since the 1880s
- Inorganic mercury based seed dressers discovered at the beginning of the 19th century but have since been withdrawn from the market due safety concerns.
- Followed by the discovery of the dithiocarbamate fungicides which are still being used today.
Introduction

- In the 1940s, chlorinated hydrocarbons and organophosphorus were introduced.
- The chlorinated hydrocarbons have been identified as severely hazardous and have been subjected to provisions of some international conventions.
- Since then other chemical groups with more target specific activity have been developed.
Introduction

- Registration is an important legal requirement
  - All over the world
    - US-EPA, UK-PSD, Canada- PMRA
- Every government has an obligation to ensure the safety of its citizens, animals, plants and the environment.
- The primary purpose of using pesticides is to control pests in crops and animals in order to reduce yield losses.
- Pesticides are toxic
- Possibility of ineffective products eg counterfeits
- Effects on environment eg DDT
Until 1977, the regulations on pesticides were governed by the provisions of the Pesticides Control Act of the East African Community.

Thereafter, the regulations were governed under the Pharmacy and Poisons Act, Cap 244.

The enactment of the Pest Control Products Act in 1982 transferred the legal mandate to the Pest Control Products Board.

Mandated to regulate importation, exportation, manufacture, distribution, and use of products used for the control of pests.
Section 4: “No person shall import into, or sell in Kenya any pest control product unless that pest control product has been Registered, packaged and labeled in accordance with regulations made under this act…”

Definition; “A pest control product is a product, device, organism, substance, or thing that is manufactured, represented, sold, or used as a means for directly or indirectly controlling, preventing, destroying, attracting, or repelling any pest….”
Legislation

May include;

- Conventional chemical pesticides
- Biopesticides; Botanicals, biochemicals, microorganisms, natural enemies
- Any compound or substance that enhances or modifies the physical or chemical characteristics of a pest control product to which it is added e.g. adjuvants and wetting agents
- Technical grade active ingredients
Scope

- Board empowered to regulate the manufacture, sale and use of:
  - insecticides, fungicides, herbicides and growth regulators used in agriculture,
  - public health pesticides
  - Pesticides for veterinary use.
Registration procedure

- Every person desiring to register a pest control product is requested to submit an application for registration of a new pest control product, an experimental label and a copy of a dossier of technical information.
- Appointment of local agents
- Board considers various aspects in order to ensure safety to the public, animals and the environment.
- Safety, efficacy, quality and economic value of pest control products in line with the Pest Control Products Registration Regulations LN 46/1984.
Registration procedure cont’d

- Technical information is summarized on the label in conformity to the Pest Control Products, Labeling, Advertising and Packaging Regulations.
- If the Board is satisfied with the information provided, the product is released under experimental permit for local biological efficacy trial.
- This is carried out in institutions that have been accredited by the board for various trials.
- Some private eg. Delmonte for pineapples, some public eg Kenya Agricultural Research Institute (KARI),
On completion of the biological efficacy trial, a confidential report is sent to PCPB.

Submission of a commercial label reflecting the application rates, timing of application as recommended by the local researcher, among other things.

Registration committee (MOH, KARI, CRF, KEBs) makes recommendations to the Board.

If the board is satisfied with the safety, efficacy, quality and economic value of a product, it is granted **full registration** for 3 years and a certificate of registration issued. This is renewable after every 2 years.
Temporary registration

- Under certain circumstances, a product may be granted temporary registration for a period not exceeding one year within which any missing technical or scientific information should be provided e.g.
  - In case there is a need for an emergency control of infestations
  - Applicant commits to produce additional information
Suspension or deregistration

- PCPB is empowered to suspend or revoke a certificate of registration if:
  - it realized later that the content of the application was false,
  - new information indicates that the product is unsafe,
  - the premises in which the product is manufactured, formulated or stored are unsuitable for the purpose.
BIOPESTICIDES

Include;

1) Microbial pesticides (bacteria, viruses, fungi, etc)
2) Biochemical pesticides
   - Semiochemicals eg insect sex pheromones,
   - Enzymes (proteins)
   - Natural plant regulators and insect growth regulators
   - Botanical pesticides etc
3) Natural enemies
   - Parasitoids
   - Predators
   - Pathogens of pests
Biopesticides; Current status in Kenya

- An increase in the number of applications
- About 45 out of 868 products are derived from plants or microorganisms (Pyrethrum based, neem, *Bacillus thuringiensis* etc)
- Due to MRL concerns
- Biodegradable, environmentally and user friendly, low preharvest intervals
EXAMPLE; Microbial biopesticides: requirements

- Application form: using SEARCH format
  - Information to the applicant
  - Import/export of live organisms
  - GMOs/LMOs: National Biosafety Committee
- Genetically modified crops: handled National Biosafety Committee
- Detailed dossier + Summary of the dossier
Microbial biopesticides: Requirements

- Dossier index for active agent
  - Identity of active agent (Taxonomy, methods of identification, enumeration, manufacture, etc)

- Biological properties (natural occurrence, lifecycle, infectivity, dispersal, colonization ability, pathogenecity, relationship with pathogenic organisms, production of antibiotics, uses, etc)
Microbial biopesticides: requirements

- Physical chemical properties
  - Physical state
  - Colour
  - Odour
  - Stability
  - Reactivity towards containers
Microbial biopesticides: requirements

- Toxicology (tiered)
  - Acute studies, (oral, inhalation, medical surveillance data)
  - Mutagenicity
  - Intra-peritoneal injection for infectivity for fungi & protozoa

- Subchronic studies

- Chronic studies/carcinogenicity
  - Neurotoxicity studies
  - Teratogenicity
  - Reproduction
Microbial biopesticides: requirements

- Ecotoxicology
  - Birds, fish, algae, bees, earth worms, soil microorganisms
- Behaviour in the environment
  - Behaviour in the soil, persistence, mobility, behaviour in surface and ground water
- Residues
  - Identity, levels, PHI, method of residue analysis
Formulated product; Dossier index

- Identity
- Physical chemical properties
- Toxicology (6 pack)
- Emergency in case of accidental exposure
- Emergence in case of fire/spillage
- Intended uses
- Commercial label,
- Evidence of registration in other countries
Formulated product; Dossier index

- Proposed packaging
- Procedures of destruction and decontamination

Guidelines for each item is provided

- Similar format used for macrobial biopesticides & biochemicals
More details are available at our website; www.pcpb.or.ke

THANK YOU