Q&A: Paving the way for lower risk crop protection: Regulatory pathways for the registration of biopesticides

1. Regulatory processes and approvals

- **Q: What are the common criteria used by regulatory agencies to assess the safety and efficacy of biopesticides?**
  - **A**: Many regulatory agencies apply a similar approach to what is described in guidelines such as those of the FAO.
- **Q: How can we harmonize the ecological aspect for biopesticide registration?**
  - **A**: Guidelines developed by the FAO or OECD can serve as a model for harmonizing the registration of biopesticides.
- **Q: What is the approval process for biopesticides?**
  - **A**: The approval procedure for biopesticides varies by country. For specific rules on registration in Pakistan, please contact the Department of Plant Protection.
- **Q: What progress is there regarding the procedure of commercial imports of pollinators, insect predators, and parasitoids?**
  - **A**: Procedures for the import of biocontrol agents vary by country. For details, contact your country's National Plant Protection Organization through the International Plant Protection Convention website.

2. Biopesticide applications and effectiveness

- **Q: What are the successful examples of biocontrol agents, especially entomopathogenic fungi? How can hurdles in the delivery system be addressed?**
  - **A**: Successful examples include *Beauveria spp*., *Metarhizium spp*., *Paecilomyces fumosoroseus,* and *Lecanicillium lecanii*. Improving product formulation enhances the efficacy of these fungi.
- **Q: What kind of biopesticide is best for controlling desert locusts and other pests?**
  - **A**: Metarhizium-based products are an example of a biopesticide that has been used for control of desert locust. Many other examples of biopesticides that have been commercialized globally can be found on the CABI Bioprotection Portal.
- **Q: How do you optimize the efficacies, economics of biopesticides in comparison with synthetic pesticides for wider adoption?**
  - **A**: Factors include efficacy, human health and environmental risks, practicability, and availability. Biopesticide performance varies by active substance, crop, and pest. For some combinations, biopesticides are already an effective part of IPM packages.
- **Q: What roles do bioagents play regarding IPM in cotton in Pakistan?**
  - **A**: Biocontrol agents like *Trichogramma* are effective against cotto pests such as *Helicoverpa armigera*.

- **Q: How can biopesticides respond to food security challenges in a balanced way?**
    - **A**: Biopesticides can be integrated as part of IPM packages to support food security.

3. Challenges and gaps

- **Q: What are the current gaps involved in understanding biopesticides?**
    - **A**: Several studies have explored this topic. Relevant findings are available in the literature, such as [link1], [link2], and [link3].
- **Q: Biopesticides are not readily available in most agrovets in Kenya where smallholder farmers can access them. What can be done to change this?**
    - **A**: The PlantwisePlus programme aims to raise awareness among farmers, advisers, and agro-input dealers about biopesticides.
- **Q: What financing is there towards the research of indigenous bioagents?**
    - **A**: Under some CABI projects as well as research projects led by other organizations, work is done to explore indigenous bioagents. There are examples of successful products being developed in this way.

4. Training and capacity building

- **Q: How is the practical training of biopesticides conducted at a grassroots level?**
    - **A**: Depending on where you are based, CABI may be leading practical trainings on how to use biopesticides in your country. There are also training resources available online through CABI's Bioprotection Portal and the CABI Academy.
- **Q: What project assistance is there for the implementation of biopesticides?**
    - **A**: Under the PlantwisePlus programme and other projects led by CABI and some other organizations, there is assistance to promote the uptake of biopesticides. Many companies that market biopesticides also provide support and advice to growers.
- **Q: How do we increase the use of biopesticides?**
    - **A**: There are a number of steps that can be taken to increase uptake, ranging from local production, applying approaches to bring prices down and make products suitable for smallholder farmers, public private partnerships; training and awareness raising; indicating efficacy such as through demonstration plots.