

Pesticides Invention to Market



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What is an agrochemical?

A chemical which can safely be applied to a crop in order to give the farmer:

- Higher yields
- Better quality produce
- Reliability
- Ease of harvest

Agrochemicals include **insecticides**, **fungicides** and **herbicides** which are collectively known as crop protection products.

Crops are in competition with weeds, plant diseases, insects and other organisms.

- About 10,000 insect species are classified as pests
- At least 600 species of plants are classified as weeds
- Some 1,500 different fungi cause plant diseases



Insect control



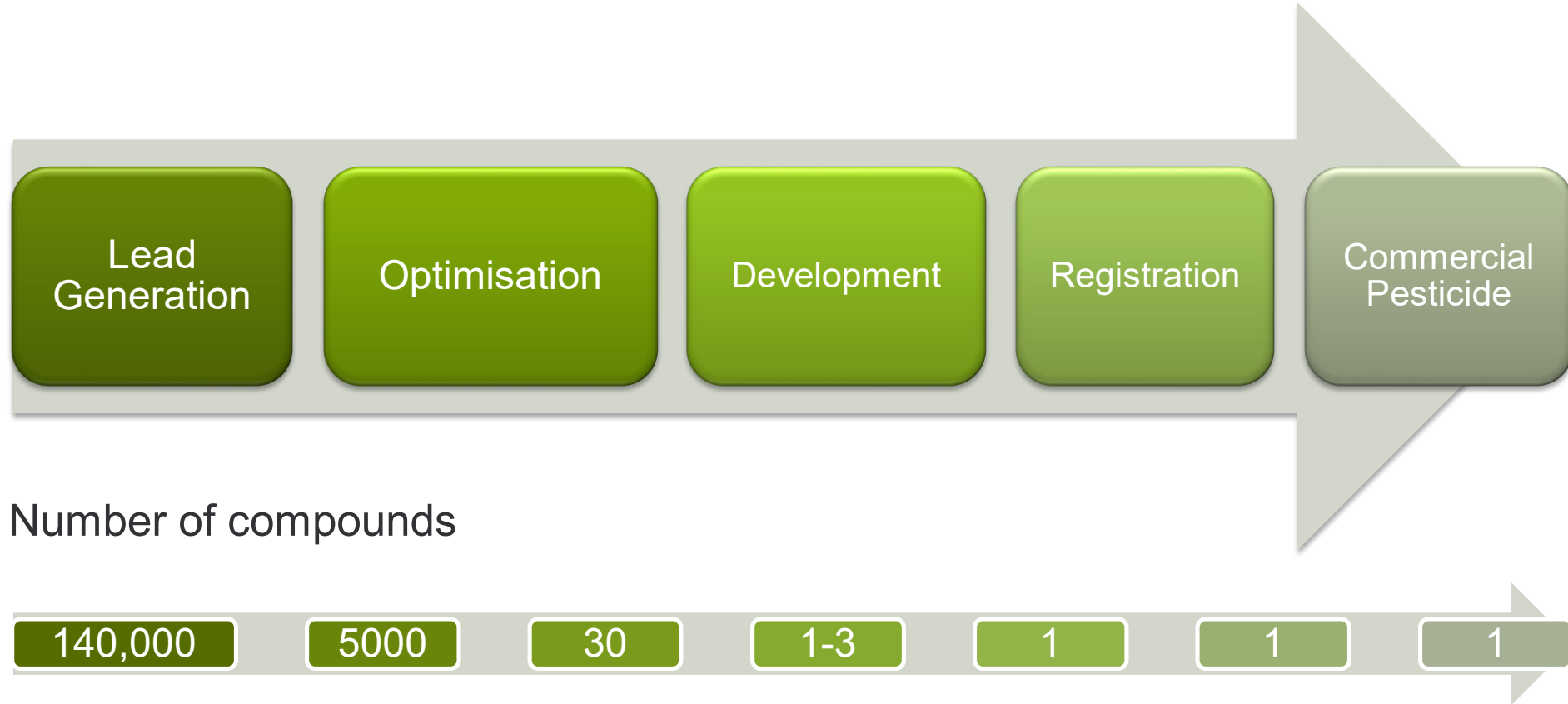
Fungal control



Weed control



The Route to Market



**Step 1: Determining
the context-of-use**



**Step 2: Addressing
core principles**



**Step 3: Fit-for-
purpose criteria**

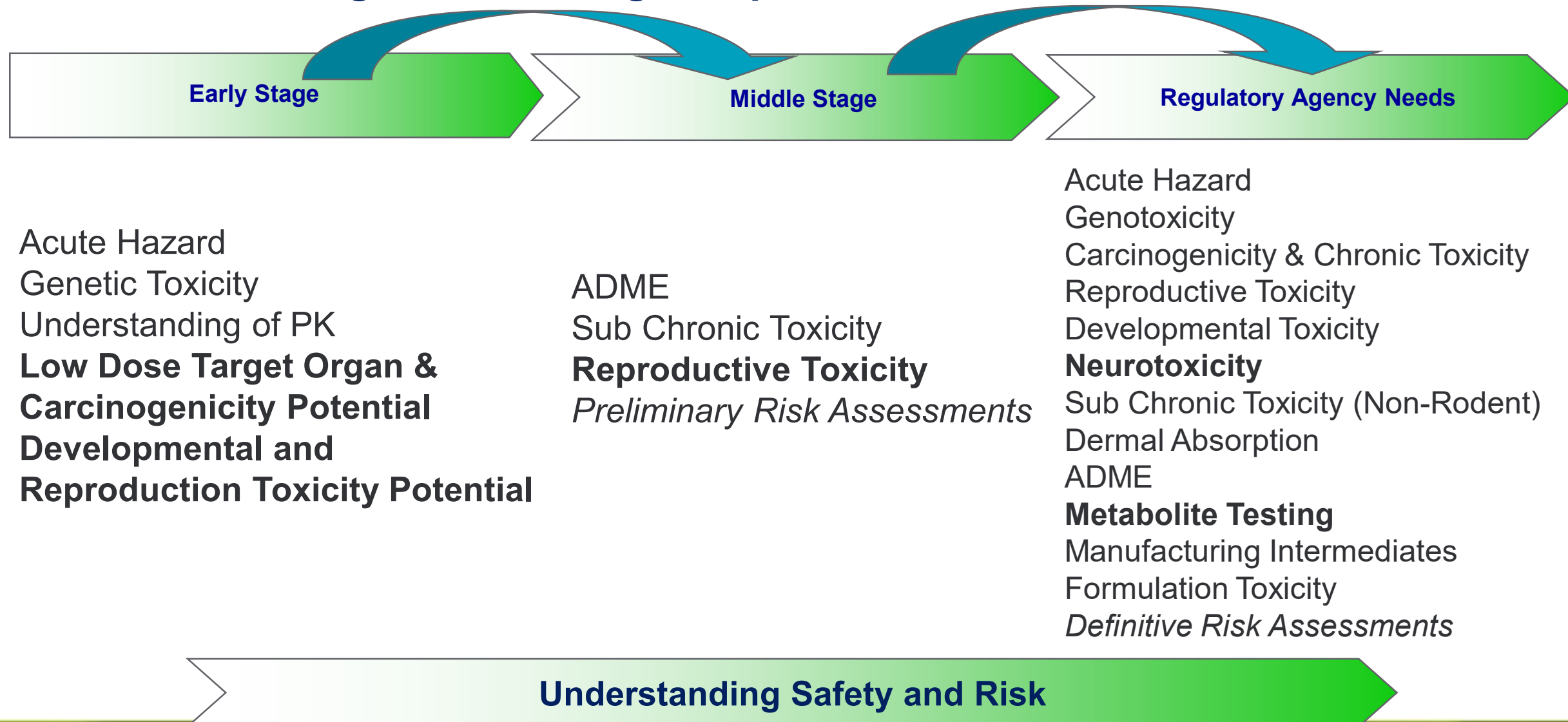


Criteria	Prioritization	Hazard Screening	Risk Assessment
chemical applicability domain	Less Important	Less Important	Less Important
SOP - source and species of cell/tissue	Less Important	Less Important	Less Important
assay description	Less Important	Less Important	Less Important
quality of verification datasets	Less Important	Less Important	Less Important
SOP - metabolic competence status	Less Important	Less Important	Less Important
FFP test validity (acceptance criteria)	Less Important	Less Important	Less Important
Independent peer review	Less Important	Less Important	Less Important
Endpoint or pathway for prediction	Less Important	Less Important	Less Important
explanation of mechanistic basis	Less Important	Less Important	Less Important
Assay robustness	Less Important	Less Important	Less Important
Data accessibility	Less Important	Less Important	Less Important
Biological comparison with in vivo data, animal or human	Less Important	Less Important	Less Important
Statistical evaluation of model/assay	Less Important	Less Important	Less Important
Level of certainty in prediction	Less Important	Less Important	Less Important
biological variability and sub-populations of relevance	Less Important	Less Important	Less Important

Less Important More Important Less Important More Important Less Important More Important

Knowledge Needs Differ According to Development Phase

Toxicological Knowledge Required:



Questions?

Bringing plant potential to life