

Pesticide Development 101

Washington State Pollinator Health Taskforce

April 27, 2020

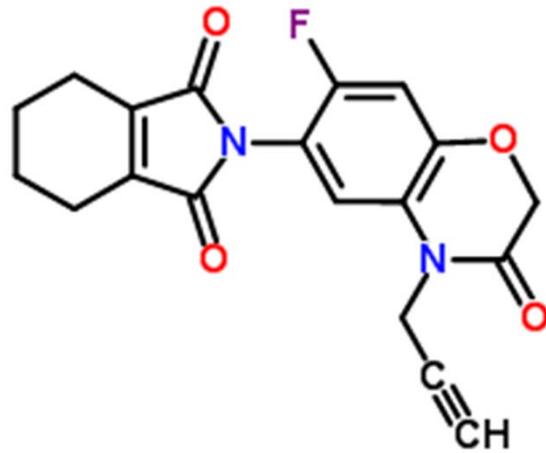
Leslie Garcia, Manager, Sustainability & Stewardship





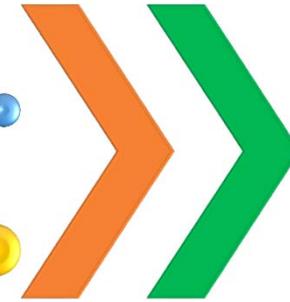
FIFRA Overview

- In the U.S. all pesticides must be registered with the U.S. Environmental Protection Agency (EPA) and state regulatory agencies before they can be distributed and commercially sold.
- Pesticides utilize an active ingredient either chemical (synthetic) or biological (natural).
- Various product types to support multiple markets.
- EPA and state agencies evaluate pesticides to ensure they will be safe when used as labeled for humans, the environment and non-target species.
- State agencies are primarily responsible to enforce compliance with federal and state pesticide laws.
- THE **LABEL** IS THE LAW!



Early Discovery

Pre-Concept



- Proof of Concept
- R&D Testing



CropLife **#CropTech Innovation Series: Episode 1 - Active Ingredients** Watch later Share

**WE DON'T FIND
ACTIVE
INGREDIENTS
BY CHANCE.**

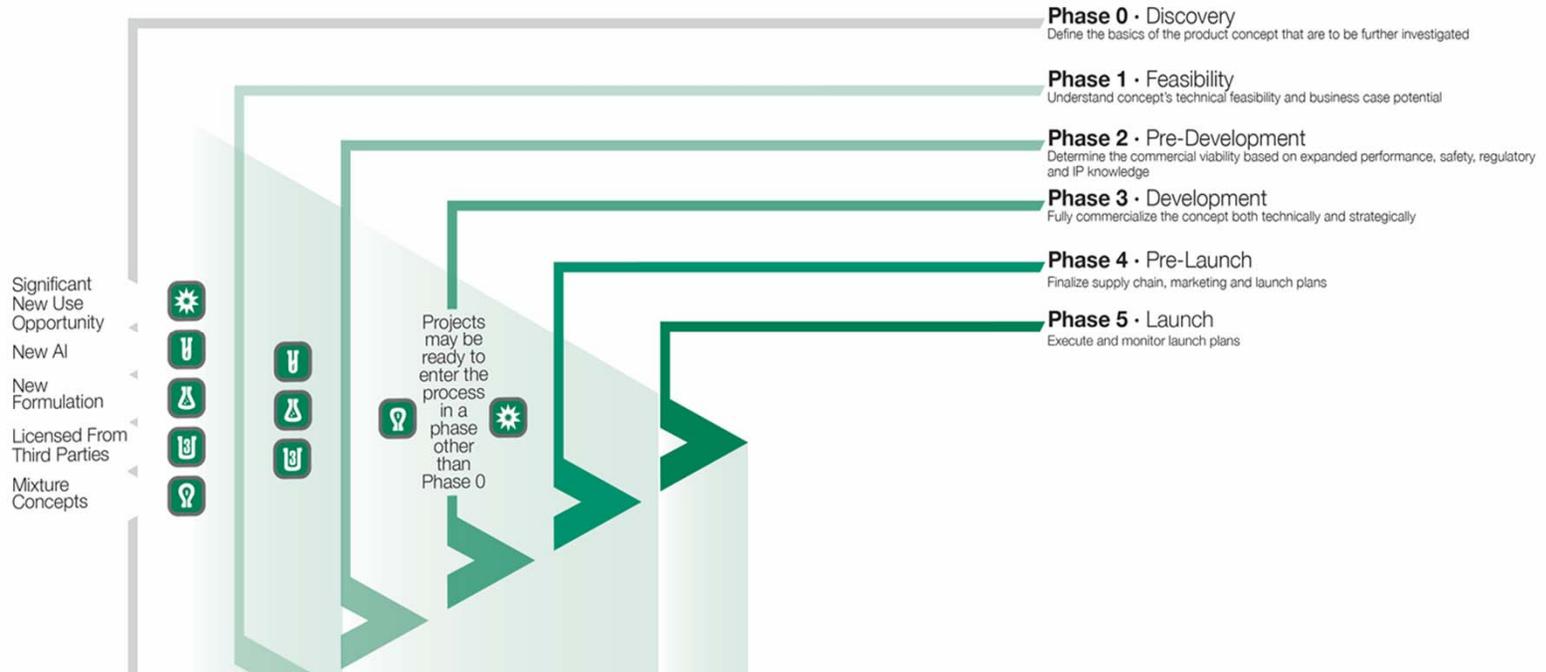
MORE VIDEOS

1:08 / 3:10

YouTube

The video player shows a man in a white lab coat speaking in a laboratory setting. The background features green plants in a growth chamber. The video title is "#CropTech Innovation Series: Episode 1 - Active Ingredients". The main text overlay reads "WE DON'T FIND ACTIVE INGREDIENTS BY CHANCE." The video progress bar indicates 1:08 / 3:10. The YouTube logo and various control icons are visible at the bottom.

Valent R&D Process



	1995	2000	2005-8	2010-15
Number of years between the first synthesis and first sale of product	8.3	9.1	9.8	11.3

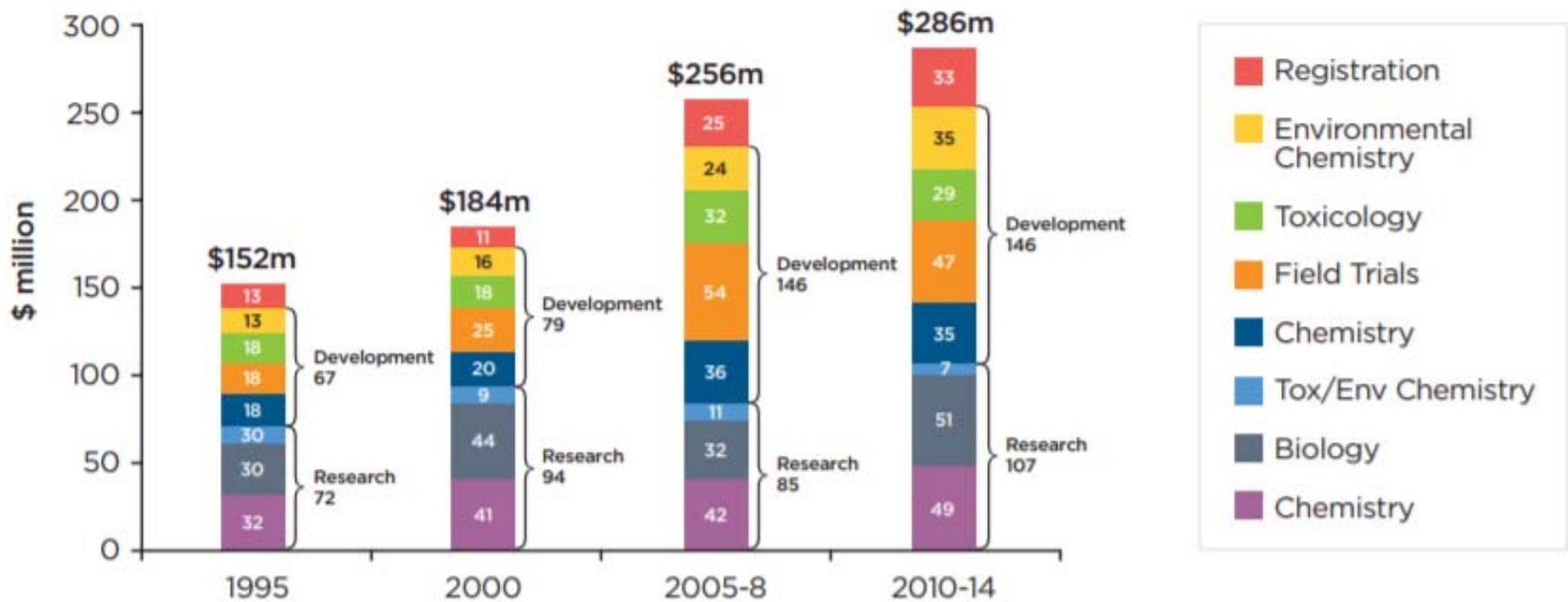
Source: Phillips McDougall, 2016

Exploratory Input
Template

Snapshot Template

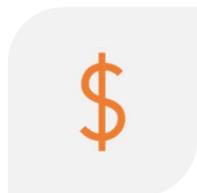
Pipeline Stage 3: Development

Figure 6: Discovery and development costs of a new crop protection product



Source: Phillips McDougall, 2016

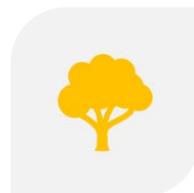
EPA Evaluation Process



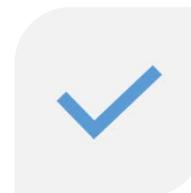
APPLICATION +
FEES
REGISTRANT
MANUFACTURER



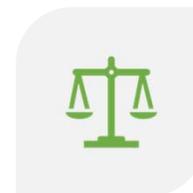
EVALUATE
HUMAN HEALTH
RISK



EVALUATE
ECOLOGICAL
RISK



RISK
ASSESSMENT &
PEER REVIEW



RISK
MANAGEMENT
& REGULATORY
DECISION

Applicant Request	EPA Fee	EPA Avg Timeline
New Chemical AI, New Food Use, R10	\$791,000	2+ years

Closing Summary

- R&D companies have invest heavily on new innovations before ever making any income
 - Some projects never make it to commercial launch
- Every one who uses a pesticide is regulatory required to read and follow the directions on the container
 - The Label is the Law
- Our industry is highly regulated from “Development to Disposal”
- Once product is commercial launched – continuous monitoring and stewardship is conducted to ensure safety