Our product pipeline

The heart of our research and development (R&D) is our product pipeline.

This visual representation of our pipeline shows how project concepts emerge from the extensive process of scientific discovery. Our R&D pipeline is an engine for delivering products. We follow such a systematic, scientific process, in part, because it allows us to offer farmers what we believe are the products that give them the most benefits. Our technology is the vehicle that will transform the research into realities. The biotechnology and trait pipeline is focused on products that provide beneficial genetic traits to enhance plants' growth or to provide nutritional or other benefits to farmers, food and feed processors, or consumers.

Farmer, processor and consumer benefits[1]

We sort pipeline projects into categories by whether they offer benefits to farmers, processors or consumers. Farmer benefits are those that increase productivity or reduce cost by increasing yield; improve protection from insects and disease; or increase tolerance to heat, drought, and other stress. Processor benefits include traits that offer better value in food and feed nutrition. Consumer benefits are advantages such as increased protein or oil, improved fatty-acid balance, and carbohydrate enhancements.

Pipeline phase descriptions

Discovery: Gene/trait identification

AVERAGE DURATION[2]
24 to 48 months

AVERAGE PROBABILITY OF SUCCESS[3]
5 percent

Conduct high-throughput screening of genetic database to identify valuable plant traits that can be used in our breeding program and valuable genes that can be used to improve plants. Apply screens to broad categories of interest, identifying multiple leads that can be investigated. Within each project category, there are specific research platforms that guide discovery work. The ongoing research within each discovery platform will generate new project leads, which are designated with a description and added in Phase one.

Phase one: Proof of concept

AVERAGE DURATION[2]
12 to 24 months

AVERAGE PROBABILITY OF SUCCESS[3]
25 percent

For breeding products, breed plants from parents with desired traits; for biotechnology products, test gene configurations in plants to screen for desired performance. Determine which product leads show the most promise for application to core crop plants.

Phase two: Early development

AVERAGE DURATION[2]
12 to 24 months

AVERAGE PROBABILITY OF SUCCESS[3]
50 percent

For breeding products, conduct field trials of plants bred from parents with desired traits; for biotechnology products, conduct lab and field testing of genes in plants to select commercial product candidates and to meet regulatory requirements.

Phase three: Advanced development

AVERAGE DURATION[2]
12 to 24 months

AVERAGE PROBABILITY OF SUCCESS[3]
75 percent

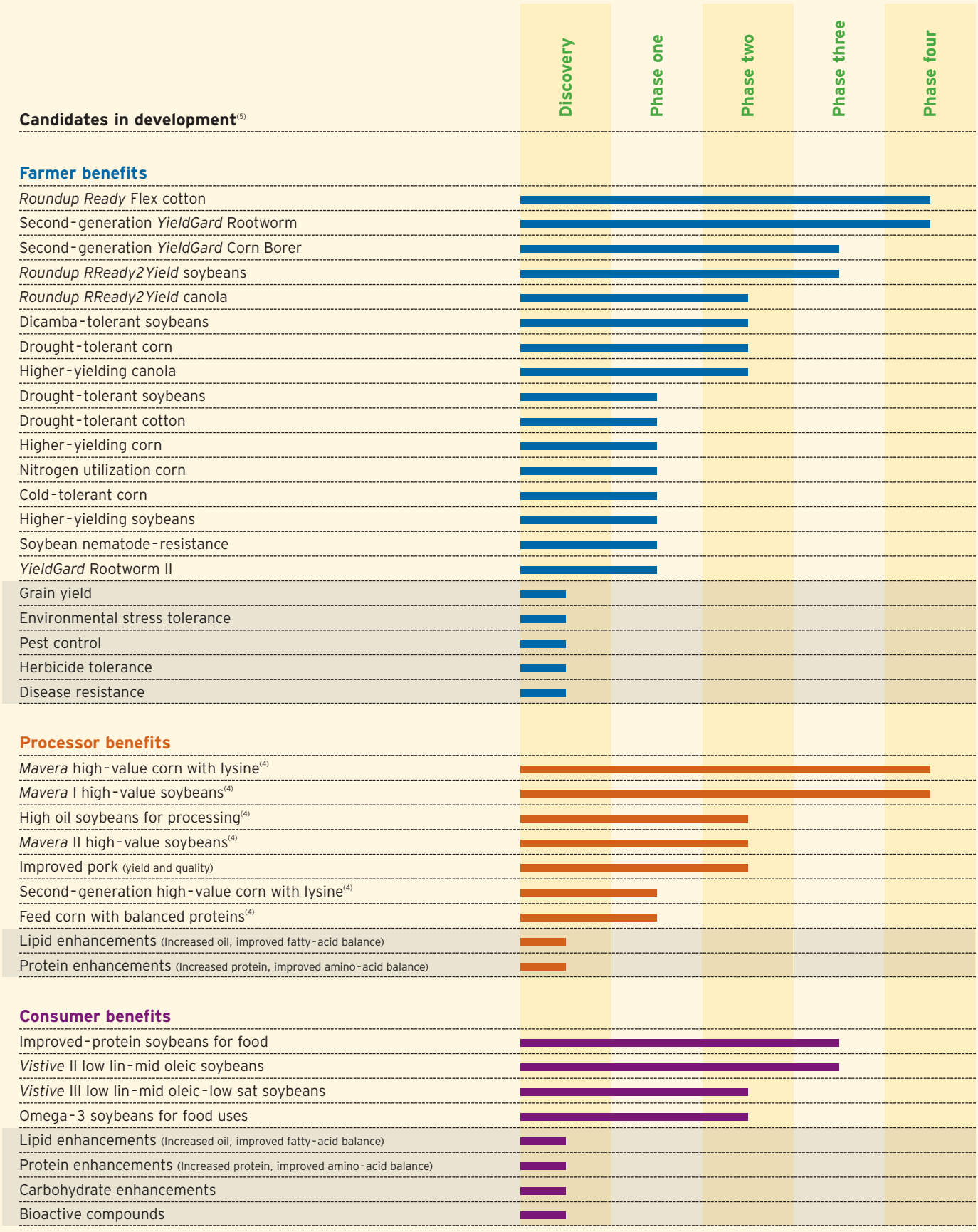
Demonstrate performance of hybrid/variety developed through breeding or demonstrate efficacy of traits in elite germplasm. Develop regulatory data as appropriate.

Phase four: Prelaunch

AVERAGE DURATION[2]
12 to 36 months

AVERAGE PROBABILITY OF SUCCESS[3]
90 percent

Produce bulk seed for potential sale, develop plans for commercialization/launch, and respond to regulatory processes as appropriate.



See page 18 for notes to the product pipeline.