

Biotechnology: Achievements in Biotechnology

Corn

Our corn portfolio demonstrates benefits to the farmer through increased yield, improved insect and disease protection, or increased tolerance to stress. Our corn products are also aimed at delivering enhanced benefits to processors including better quality animal feed and corn with higher levels of oil for food and fuel.

PRODUCT	PHASE
<i>YieldGard</i> VT Stacks	IV
<i>YieldGard</i> VT PRO Stacks	IV
<i>Mavera</i> high-value corn with lysine	IV
Renessen corn processing system	IV
Drought-tolerant corn	II
Higher-yielding corn	II
Second-generation high-value corn with lysine	I
<i>YieldGard</i> Rootworm III	I
Second-generation drought-tolerant corn	I
Nitrogen utilization corn	I

Cotton

Our cotton pipeline seeks to provide benefits to the farmer through herbicide tolerance, insect protection, and products that improve lint yield.

PRODUCT	PHASE
<i>Bollgard III</i>	II
Cotton Lygus control	I
Drought-tolerant cotton	I
Dicamba-tolerant cotton	I

Oil Seeds

Our research on oilseed crops, including soybeans and canola, offers benefits to the farmer, the processor and the consumer. Farmers benefit from increased yield or protection from stress;

better tasting and improved oils with zero trans fats translate into benefits to the consumer; and processors benefit from higher levels of oil, protein, and amino acids for feed, food and fuel.

PRODUCT	PHASE
<i>Mavera I</i> high-value soybeans	IV
Improved-protein soybeans for food	IV
<i>Roundup RReady2Yield</i> soybeans	IV
<i>Vistive II</i> low lin — mid oleic soybeans	III
Omega-3 soybeans for food uses	III
High oil soybeans for processing	III
<i>Mavera II</i> high-value soybeans	II
High stearate soybeans	II
<i>Vistive III</i> low lin — mid oleic — low sat soybeans	II
Dicamba-tolerant soybeans	II
Insect-protected soybeans	II
Higher-yielding soybeans	II
<i>Roundup Ready 2</i> canola	II
Higher-yielding canola	II
Water-use efficiency soybeans	I
Soybean nematode-resistance	I

Other Crops

Monsanto's innovative research is also aimed at offering a new generation of benefits to farmers of other crops like alfalfa, sugar beets, as well as fruits and vegetables. In some cases, including in alfalfa and sugar beets, we work with third-parties to license our trait technologies so farmers can realize the benefits of these products. Longer term, biotechnology applications may also be an option in small-acre crops like fruits and vegetables, and such investments will be evaluated in the context of Monsanto's research-and-development priorities and potential commercial business opportunities.

PRODUCT	PHASE
<i>Roundup Ready</i> sugar beets	IV
Reduced lignin alfalfa	II

Sources and Links

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2. NABT Sourcebook of Biotechnology
3. Bud, Robert, "Janus-faced Biotechnology - An Historical Perspective", Trends in Biotechnology v. 7, 1989, p. 230-33
4. Torrey, John G., "The Development of Plant Biotechnology", American Scientist, 1985, 73:354-363
5. Goodman, David C., From Farming to Biotechnology: A Theory of Agro-industrial Development Oxford: Blackwell, 1987
6. Seabrook, John, "Tremors in the Hothouse", The New Yorker July 19, 1993 p. 32-41

