Quality traits reach market

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181.5 million hectares of biotech crops were grown globally in 2014. In the United States, the recent approval of a bruise-resistant Arctic apple followed that of a low-polyacrylamide, nonbrowning Innate potato (*Nat. Biotechnol.* **33**, 12–13, 2015). Other quality traits in the field include

Global area by transgenic trait

Area of insect-resistant varieties shrank, but plantings of crops with stacked traits continued apace.

Source: International Service for the Acquisition of Agri-Biotech Applications.

Global area of transgenic crops by country

Canada caught up to India in terms of transgenic plantings; US, Brazil and Uruguay continued growth, but China, Australia, South Africa and Myanmar shrank in hectareage.

Source: International Service for the Acquisition of Agri-Biotech Applications.

EU transgenic crop field trials

Another low: Spain and Sweden dominate EU fields with four each of a total of 12 releases.

*2014 figures to be updated 4/26/15. Source: http://gmoinfo.jrc.ec.europa.eu/gmp_browse.aspx

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vitamin A-enriched rice, and bananas and maize with elevated omega-3 or oleic acid. Several maize varieties with improved nitrogen uptake are under testing; DroughtGard maize showed a 5.5-fold increase in US plantings. Bangladesh commercialized its first transgenic crop, *Bt* brinjal.

Historical global area and value of transgenic crops

Transgenic acreage grew 4% in 2014, representing 35% of the global seed market.

Source: International Service for the Acquisition of Agri-Biotech Applications. Value data are explicitly from seeds and licensing revenue rather than from 'crops' themselves.

Transgenic crop adoption rate in the US

All the major crops in the US are now predominantly transgenic.

**Canola adoption rates are based on global data rather than US data.

Source: International Service for the Acquisition of Agri-Biotech Applications; National Agricultural Statistics Service.

Notable transgenic crop/traits receiving approval

Country	Crop	Company	Decision
US	Alfalfa	Monsanto	KK179 MON-00179-5 (HarVXtra) Transgenic alfalfa with reduced lignin via expression of inverted repeats of caffeoyl CoA 3-O-methyltransferase gene; resulting RNA interference of endogenous gene reduces synthesis of the G lignin subunit.
US	Soybean	Dow Agrosciences	DAS-44406-6 (Enlist Duo) Transgenic soybean expressing the arylalkanoate dioxygenase 12 protein from <i>Delftia acidovorans</i> under the control of <i>AtUbi10</i> promoter, phosphinothricin acetyltransferase from <i>Streptomyces viridochromogenes</i> under a cassava vein mosaic virus promoter, and a mutated 5-enolpyruvylshikimate-3-phosphate synthase gene from <i>Zea mays</i> under an XYZ promoter, which confer resistance to 2,4-D choline, glufosinate ammonium and glyphosate herbicides, respectively.
US	Apple	Okanagan	OKA-NB001-8/OKA-NB002-9 (Arctic) Transgenic Golden Delicious or Granny Smith apples expressing a chimeric polyphenol oxidase (PPO) suppression element derived from apple PPO sequences under the control of the Cauliflower mosaic virus promoter/5' untranslated leader sequence of alfalfa mosaic virus RNA4, conferring reduced tissue browning in response to mechanical damage (e.g., slicing or bruising); a neomycin phosphotransferase kanamycin-selectable marker is also present.

Source: <http://bch.cbd.int/database/organisms/>