

GA21 maize

GA21 maize is one of Syngenta's Roundup Ready maizes. It was genetically engineered by particle acceleration (biolistic) transformation to be tolerant to glyphosate-containing herbicides (Roundup). Through the transformation three complete copies of the m-epsps gene were inserted into the maize genome.

GA21 maize is currently approved for cultivation in the USA, Canada, Japan, Brazil, Argentina and the Philippines. In several other countries, including the EU, GA21 maize is approved for food/feed uses. In 2009 GA21 maize was commercially grown in the USA, Canada and Argentina.

In the EU GA21 maize was authorized for food/feed by the EU Commission in 2008 after no qualified majority of the EU Council of Ministers voted in favour or against it in 2007. The [authorisation](#) [1] is valid until 2018. An [application](#) [2] for cultivation is pending. Field trials with GA21 are conducted in Spain and Rumania. One of the purposes of these field trials is vareity registration.

In the last years, the cultivation of glyphosate tolerant GM crops have been increasingly criticized because the product "Roundup" has stronger adverse effects then the active ingredient "glyphosate" on its own, especially due to the use of adjuvants and surfactants. These include adverse effects on human cells. Due to effects on fish and aquatic invertebrates, Roundup is not aproved for aquatic uses or over water ([Monsanto](#) [3]).

authorization status: feed

food

link to EU authorization: [EU authorization status](#) [4]

subject to withdrawl and/or bans: none

Genes:

- [m epsps](#) [5]

GM Event:

- [GA21](#) [6]

Trade name:

- [Agrisure GT](#) [7]

Traits:

- [HT - glyphosate](#) [8]

Related application(s): [GA21 as food/feed](#) [9]

[GA21 cultivation](#) [10]

[Bt11 x GA21 as food/feed](#) [11]

[agbios database entry](#) [12]

[Biosafety Clearing-House entry](#) [13]

[Commission Decision authorising the placing on the market of products containing, consisting of, or produced from genetically modified maize GA21](#) [4]

Scientific articles: [Richard et al. \(2005\): Differential Effects of Glyphosate and Roundup on Human](#)

[Placental Cells and Aromatase.](#) [14]

[El-Shenawy, N.S. \(2009\). Oxidative stress responses of rats exposed to Roundup and its active ingredient glyphosate.](#) [15]

[Caglar, S. & Kolankaya, D. \(2008\). The effect of sub-acute and sub-chronic exposure of rats to the glyphosate-based herbicide Roundup.](#) [16]

[Gasnier et al. \(2009\). Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines.](#) [17]

[Benachour, N. & Séralini, G.E. \(2009\). Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells.](#) [18]

[Impressum](#) | [Datenschutzerklärung](#)

Quellen-URL: <https://www.testbiotech.org/content/ga21-maize>

Links

[1] http://ec.europa.eu/food/dyna/gm_register/gm_register_auth.cfm?pr_id=3 [2]

<http://www.testbiotech.org/en/node/205> [3]

http://www.monsanto.com/monsanto/content/products/productivity/roundup/bkg_amphib_05a.pdf [4]

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ%3AL%3A2008%3A087%3A0019%3A0022%3AEN%3APDF> [5] <https://www.testbiotech.org/taxonomy/term/144> [6]

<https://www.testbiotech.org/taxonomy/term/83> [7] <https://www.testbiotech.org/taxonomy/term/82>

[8] <https://www.testbiotech.org/taxonomy/term/44> [9]

<https://www.testbiotech.org/content/ga21-foodfeed> [10]

<https://www.testbiotech.org/content/ga21-cultivation> [11] <https://www.testbiotech.org/content/bt11-x-ga21-foodfeed> [12]

<http://www.agbios.com/dbase.php?action=ShowProd&data=GA21> [13]

<http://bch.cbd.int/database/record-v4.shtml?documentid=14794> [14]

<http://www.ehponline.org/members/2005/7728/7728.html> [15] http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6D-4WJHB69-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1157556399&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=64ce448ba29a8ae4a9 [16]

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6D-4PMJK22-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1157556264&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=ccec856cb5726d6736 [17] http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TCN-4WJBC0R-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1157560477&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=b925b610d77313345c [18]

<http://pubs.acs.org/doi/abs/10.1021/tx800218n>