



Final Health and Environmental Risk Assessment of Genetically Modified Soybean A2704-12

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Authors' contributions

This work was carried out in collaboration among all authors. The opinion has been assessed and approved by the Panel on Genetically Modified Organisms of VKM. All authors read and approved the final manuscript.

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ABSTRACT

Soybean A2704-12 expresses the phosphinothricin-N-acetyltransferase (pat) gene, from the soil bacterium *Streptomyces viridochromogenes*. The encoded PAT protein confers tolerance to the active herbicidal substance glufosinate-ammonium. Bioinformatics analyses of the inserted DNA and flanking sequences in soybean A2704-12 have not indicated a potential production of putative harmful proteins or polypeptides caused by the genetic modification. Genomic stability of the functional insert and consistent expression of the pat gene have been shown over several generations of soybean A2704-12. With the exception of the intended changes caused by the transgenetically introduced trait, data from field trials performed in the USA and Canada show that soybean A2704-12 is compositionally, morphologically and agronomically equivalent to its conventional counterpart and to other commercial soybean varieties. A repeated dose toxicity

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study in with rats and a nutritional assessment trial with broilers indicate that soybean A2704-12 is nutritionally equivalent to and as safe as conventional soybean varieties. The PAT protein produced in soybean A270412 does not show sequence resemblance to known toxins or IgE-dependent allergens, nor has it been reported to cause IgE-mediated allergic reactions. Soybean is not cultivated in Norway, and there are no cross-compatible wild or weedy relatives of soybean in Europe.

Based on current knowledge, the VKM GMO Panel concludes that with the intended usage, there are no discernible safety concerns associated with soybean A2704-12 regarding human or animal health or to the environment in Norway.

Keywords: *GMO; soybean (Glycine max); A2704-12; EFSA/GMO/NL/2005/18; herbicide tolerance; pat; food and feed safety; environmental risk; Regulation (EC) No 1829/2003; VKM; risk assessment; Norwegian Scientific Committee for Food Safety; Norwegian Environment Agency.*

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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