

薬用遺伝子組換え植物の開発・生産に関する最近の動向

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Current Status of Application and Commercialization of Genetically Modified Plants for Human and Livestock Health

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Summary

Developments in the use of genetically modified plants for human and livestock health were surveyed by information retrieval from Entrez PubMed, Chemical Abstracts, Google, congress abstracts and proceedings of related scientific societies, scientific journals, and so on. Obtained information was classified into 7 categories according to the research objective and the usage of the transgenic plants as 1: functional foods (nutraceuticals), 2: edible vaccines, 3: edible curatives, 4: vaccine antigens, 5: therapeutic antibodies, 6: curatives, 7: diagnostic agents and reagents. The numbers of cases were 32 for nutraceuticals, 32 for edible vaccines, 12 for edible curatives, 6 for vaccine antigens, 9 for therapeutic antibodies, 32 for curatives, and 7 for diagnostic agents and reagents. Functional foods, edible vaccines and curatives were predominant. GM plant-made nutraceuticals and pharmaceuticals are now being actively developed because of their cost-effectiveness, qualitative benefits including reduced health risks from pathogen contamination, and ability to achieve most of the post-translational maturations of complex proteins that are required for biological activity.

Key words

GM plant, Molecular farming, Nutraceutical, Edible vaccine, Plant-made pharmaceutical