BẢN TIN NGÀY THỨ SÁU 2-6-2023

BẢN TIN SỐ 1

Canada Updates Guidance To Promote Transparency of Gene Editing Regulatory Process

On May 3, 2023, Minister of Agriculture and Agri-food Marie Claude-Bibeau announced that Canada updated its guidance for seed regulations to strengthen the country's transparency measures for plant breeding innovation. Plant breeders now have better access to new seed varieties that can aid agricultural food security and climate change resiliency.

The updated measures can be found in Part V of the Seeds Regulations, which states that Canada will create a Government-Industry Steering Committee on Plant Breeding Innovations Transparency whose objective is to facilitate discussions about gene-edited products that are projected to enter the market. The measures will also help execute the expansion of Seeds Canada's Canadian Variety Transparency Database to promote the transparency of information on individual seed varieties. This will be overseen by the Canadian Variety Transparency Database to ensure the completeness and robustness of the database.

Agriculture supporters welcomed the move from the Ministry. "The Canadian Federation of Agriculture supports the release of CFIA's new guidance on plant breeding innovation and ongoing commitment to transparency for producers. This will ultimately help Canadian farmers access new plant varieties that are more resilient to pests and extreme weather events and support our food security and sustainability objectives," said Keith Currie, President of the Canadian Federation of Agriculture. CFIA stands for Canadian Food Inspection Agency.

The new measures also direct the Canadian government to provide funds for the review of the country's organic standards to protect the integrity of the organic sector. Both initiatives are advantageous to farmers when making informed decisions about their produce.

Read the announcement from Agriculture and Agri-Food Canada for more details.
https://www.isaaa.org/kc/cropbiotechupdate/ged/article/default.asp?ID=20188

BẢN TIN SỐ 2

EU MEP Says New Genetic Techniques to Innovate Farming and Help to Adapt to Climate Change

Figure: “We should be open to all kinds of technologies that help us facing the challenges that lie ahead of us,” centre-right MEP Norbert Lins said. Photo Source: Alexis HAULOT/European Union

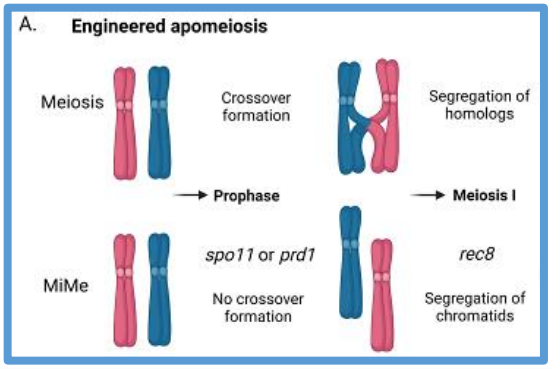
As the European Commission's food safety service is finishing the long-awaited proposal on whether to loosen the rules on new genomic techniques (NGTs), member of the European Parliament (MEP) Norbert Lins said that the European Union (EU) must work towards regulation that enables the responsible use of new genomic techniques to innovate the farming sector while remaining centered around the precautionary principle.
For MEP Lins, who is also chair of the European Parliament's agriculture committee, the EU needs NGTs for urgently-needed innovations in plant breeding. A vocal advocate of the technology, he said that the legislative proposal, expected to be released in July, should be designed so that it does not impose any unnecessary restrictions on agriculture. He added that the EU must embrace all potential tools in the toolbox to help future-proof the farming sector against climate change.

“We should be open to all kinds of technologies that help us face the challenges that lie ahead of us,” MEP Lins said, adding that new breeding techniques can be “one tool to reduce pesticide use, ensure food security, and help to adapt to climate change”.

For more details, read the article in Euractiv Agrifood.
https://www.isaaa.org/kc/cropbiotechupdate/ged/article/default.asp?ID=20197

BẢN TIN KHOA HỌC

Engineering apomixis in crops



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Abstract

Apomixis is an asexual mode of reproduction through seeds where progeny are clones of the mother plants. Naturally apomictic modes of reproduction are found in hundreds of plant genera distributed across more than 30 plant families, but are absent in major crop plants. Apomixis has the potential to be a breakthrough technology by allowing the propagation through seed of any genotype, including F1 hybrids. Here, we have summarized the recent progress toward synthetic apomixis, where combining targeted modifications of both the meiosis and fertilization processes leads to the production of clonal seeds at high frequencies. Despite some remaining challenges, the technology has approached a level of maturity that allows its consideration for application in the field.

See https://link.springer.com/article/10.1007/s00122-023-04357-3

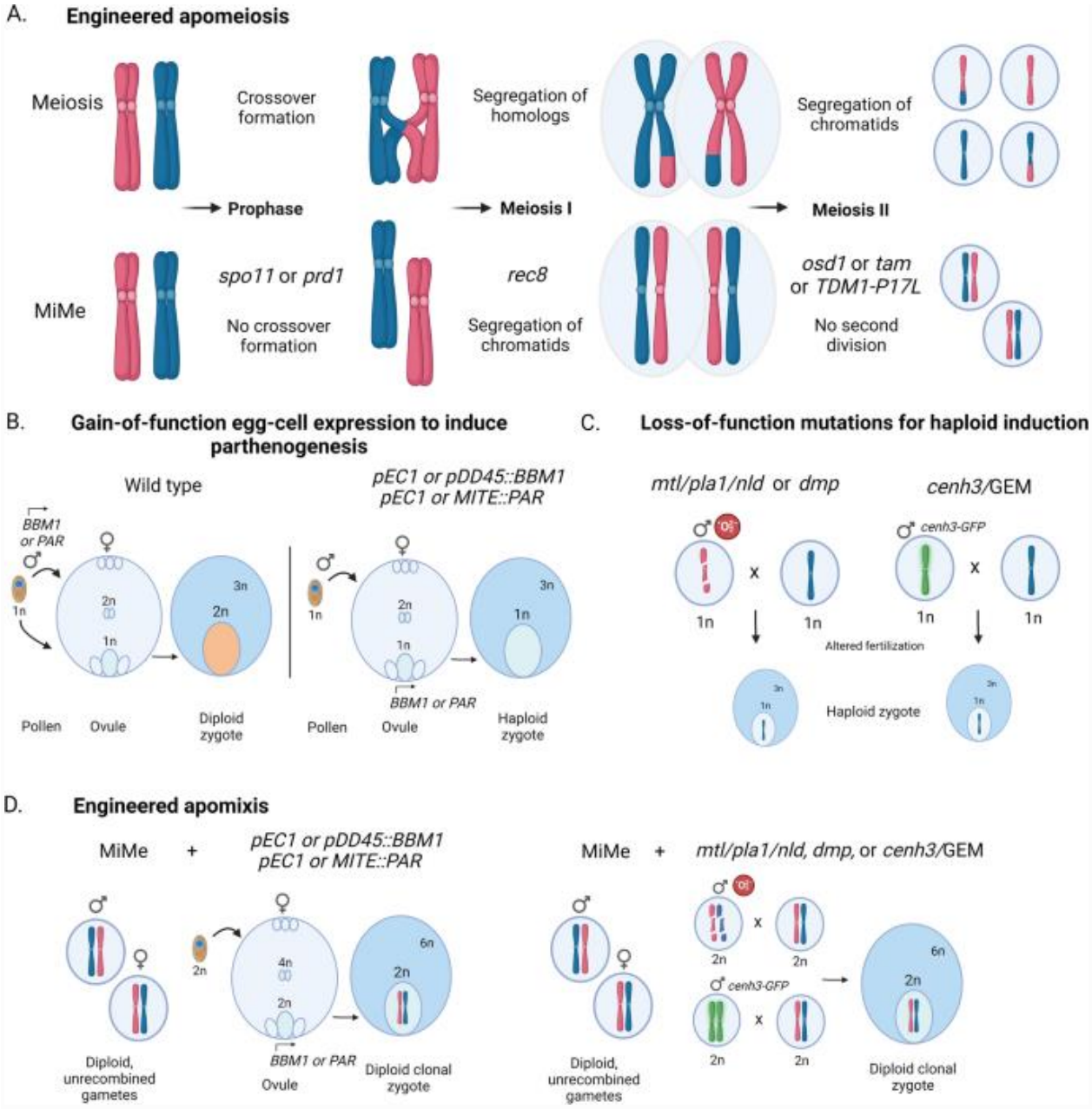

Fig.1: Engineering apomeiosis and parthenogenesis. Mutations in three meiotic genes (MiMe) alter crucial stages of meiosis to result in a mitotic-like division of chromosomes, mimicking and providing a tool to implement apomeiosis (**A**). Embryogenesis in many plants results from fertilization of the female-derived ovule and central cell by the male-derived pollen to give rise to a diploid zygote and triploid endosperm (**B**, left). Prior to fertilization, *BBM1* and *PAR* are expressed in the male gamete; redirecting their expression to the ovule can result in the formation of haploid zygotes (**B**, right). Alternatively, mutations in *MTL/PLA1/NLD*, *DMP*, or *CENH3* can hinder fertilization by disrupting one parental gamete contribution, and can produce haploid zygotes (**C**). By pairing MiMe with male expressed *BBM1/PAR* or mutations in *MTL/PLA1/NLD*, *DMP*, or *CENH3*, clonal

progeny can be obtained that represent synthetic apomicts (**D**). Figure created with BioRender.com