Locked seeds

Who wins and who loses when new GMOs get patented?

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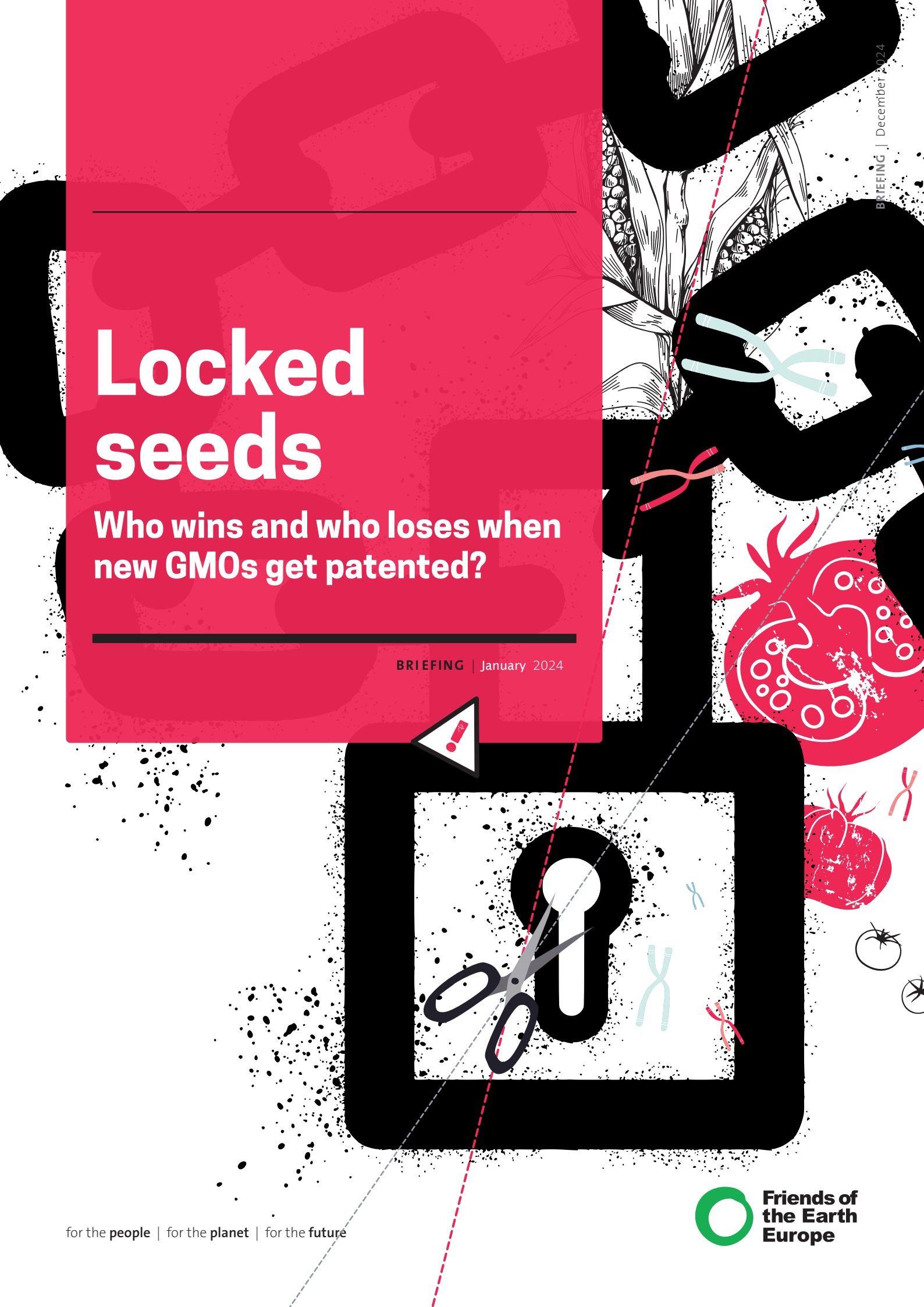

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Friends of the Earth Europe

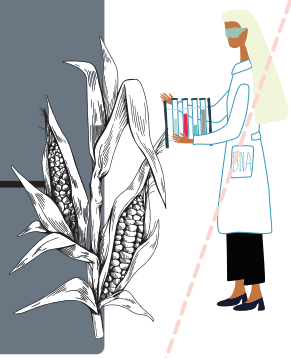
Who benefits from increasing controls of the patent landscape?

The Big Three

The 'Big Three' biotech corporations - Corteva, Bayer and Chem China/ Syngenta - stand to benefit significantly from the law to deregulate new GMOs. If their new GMOs succeed, they could trigger a wave of patented plants across Europe's fields. For example, Chem China/Syngenta praises the combination of new GMOs and patents as a way to "expand the potential of CRISPR-based technologies through [its] collaborative innovation platform" - a narrative that positions corporate-driven control as necessary for innovation in the farming sector.[1]

Although the stance of Euroseed, the lobby group for all plant breeders',[2] is more modest, it remains that the patents being proposed go far beyond gene editing. They are deliberately broad, encompassing traits resulting not only from genome editing, but also from classical breeding and even natural processes. By patenting traits that occur naturally or through classical breeding methods, the Big Three will be able to claim ownership of natural seeds and products from classical breeding, blocking small and medium-sized breeders from accessing these resources. This corporate strategy allows them to profit from selling patented products or licensing the technology to others.[3]

Who Loses?



1. Small and Medium Breeders

In the EU, breeders have historically benefitted from 'breeder's privilege', which ensures free access to genetic material for developing new conventional or organic crop varieties, supported by plant variety property right laws designed to reward breeders' efforts. However, with the push from big biotech corporations to deregulate new GMOs and introduce now patented plants, breeders will now be forced to sign licensing agreements with biotech giants like Corteva, if they want to use gene editing technologies like CRISRP. This shift will reshape the landscape of intellectual property protection, consolidating corporate control over the European arable farming sector.[4]

Patents on seeds reduce access to breeding material, significantly hampering the ability of breeders to adapt to new challenges such as emerging diseases and extreme weather conditions.

For example, the breeding corporation KWS holds a patent for cold-resistant maize (EP 3380618). This maize was developed using classical breeding methods, but random mutagenesis was later introduced 'on top' to create the illusion of a technical invention.[5] A Dutch maize breeder is already being affected by this patent, struggling to gain legal clarity on whether her maize can still be used for further breeding and if she can market her seeds without infringing on the patent claim.[6]

Whoever controls access to seeds holds the power to shape the future of the breeding sector. While small and medium-sized breeding companies have historically played a vital role in Europe's diverse agricultural landscape, these new patents will restrict their access to genetic material, ultimately consolidating control in the hands of large corporations.

The coalition No Patents on Seeds listed the impact for conventional breeders:[7]

- one single variety may need several licenses before marketing can commence;
- it is unclear which patents will ultimately be the most relevant and, therefore, unclear which patent holder should be approached for a license;
- the costs for some of the licenses are reportedly very high, especially for smaller breeders;
- even if no costs were to be incurred, smaller plant breeders would need contracts with patent holders, thus creating new dependencies on big corporations, such as Bayer, BASF, Syngenta and KWS.

In addition, the license platforms proposed by industry as a solution cannot solve the problems: several license contracts may be needed with several companies to produce the desired traits, thus again strongly increasing dependencies on larger companies. As a result, legal uncertainty and the threat of incurring high costs are likely to prevent them from breeding the desired varieties.

These licence platforms are promoted by Euroseeds and for example by Syngenta.[8]

2. Farmers

Farmers are also at risk. Patented seeds often come with contractual restrictions. These contracts deepen farmers' dependence on corporations for yearly seed purchases, increasing their costs and reducing autonomy.

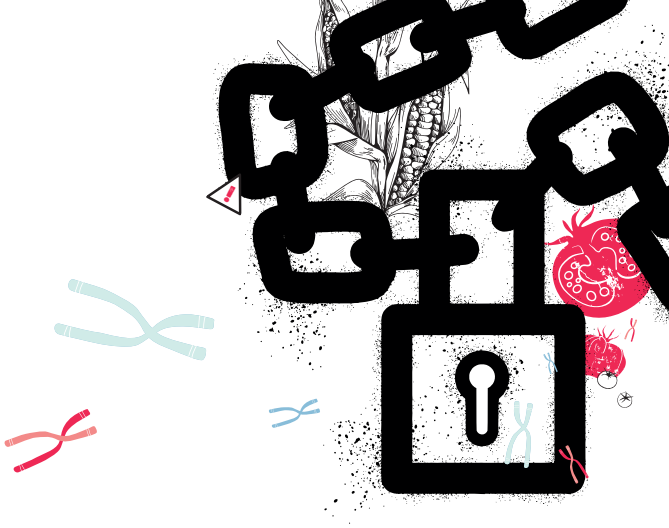
The increased control over genetic diversity limits the availability of diverse seeds, particularly those that rely on traditional breeding practices. Given the escalating climate crisis, this restriction poses a serious threat to the development of climate-resilient crops. There is a pressing need for diverse, high-quality seed varieties to adapt to environmental challenges, not fewer options dominated by corporate interests.

The EU's reluctance to assess how patents on gene edited plants affect breeders and farmers has exacerbated these challenges. Despite calls in 2020 from civil society organisations and farmer coalitions for stronger assessing the impacts of patents on new GMOs, the EU Commission dismissed this demand and only started a study in 2024.

Currently, just a handful of corporations control more than 60 percent of the global commercial seed market.[9] Biotech industry giants, particularly Corteva, have secured significant control over patents for certain gene editing techniques called CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats), expanding their control over the plant patent landscape.[10] While patented seeds have played a limited role in Europe's breeding and farming sectors, this is now changing with the development of new GMOs as they will further strengthen corporate control over farmers and breeders.

The issue of patents on new GMOs and their impacts on the breeding sector and farmers' access to seeds is central in EU decision makers' deregulation discussions.[11] However, the text agreed upon by the EU Parliament[12] and the draft of the agriculture ministers fail to offer a real solution to these problems.[13]

Conclusion



As patents on gene editing blur the lines between conventional breeding and genetic engineering, their scope extends to crops traditionally exempt from such controls, further tightening corporate control over Europe's food system.

Unless the EU and the European Patent office address the issue of patents on essential biological process and implement specific restrictions on new GMO patents, any push to deregulate these new GMOs will limit farmers' access to seeds capable of adapting to new challenges, like extreme weather. Breeders will be forced into lengthy negotiations with a handful of powerful biotech corporations to maintain the right to work with genetic material, whether developed through conventional breeding or gene-editing.

Endnotes:

1 https://www.syngentagroup.com/newsroom/2024/syngenta-opens-rights-genome-editing-and-breeding-technologies-boost-agricultural-0

2 Euroseeds, *Position: Euroseeds View on Intellectual Property,* https://euroseeds.eu/app/uploads/2024/06/24.0386.3-Euroseeds-view-on-IP.pdf)

3 https://friendsoftheearth.eu/publication/how-biotech-giants-use-patents-new-gmos-to-control-the-future-of-food/

4 https://www.testbiotech.org/wp-content/uploads/2021/06/Patents_on-new-GE.pdf

5 The patent explicitly states conventional breeding and usage of the existing biological diversity is the real source of this 'invention': on page 27, a short summary of the examples shows that further crossing and selection are sufficient to achieve the desired plants. https://www.no-patents-on-seeds.org/en/maize-cold-resistance

6 https://www.no-patents-on-seeds.org/en/opposition

7 https://www.no-patents-on-seeds.org/sites/default/files/news/How%20CRISPR%20patents%20block%20conventional%20breeding.pdf

8 https://www.syngentagroup.com/newsroom/2024/syngenta-opens-rights-genome-editing-and-breeding-technologies-boost-agricultural-0.

9 https://www.etcgroup.org/content/food-barons-2022

10 *EXPOSED: How Biotech Giants Use Patents and New GMOs to Control the Future of Food,* (10/2022) Friends of the Earth Europe, https://friendsoftheearth.eu/wp-content/uploads/2022/10/G2_BIOTECH_GIANTS_EXPOSED.pdf

11 The EU Commission published its law to deregulate most news GMOs in July 2023. *Proposal for a Regulation of The European Parliament and of the Council on plants obtained by certain new genomic techniques and their food and feed, and amending Regulation (EU) 2017/625* https://food.ec.europa.eu/system/files/2023-07/gmo_biotech_ngt_proposal.pdf (European Commission, 2023). The European Parliament agreed its position beginning of 2024, following widely the Commission proposal but suggested to limit patents on new GMOs

12 https://www.europarl.europa.eu/news/en/press-room/20240202IPR17320/new-genomic-techniques-meps-back-rules-to-support-green-transition-of-farmers

13 https://www.martin-haeusling.eu/images/Legal_study_possibillities_for_a_bio_patent_reform_parliamentary_Group_B%C3%BCndnis90DieGr%C3%BCnen.pdf

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