



**Date:** 25 November 2025

**Subject:** Safeguarding Agriculture, Biodiversity, and Public Trust – Comments on ion beam breeding, a form of New Genomic Techniques (NGTs)

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Mr. KYUMA, Kazuo, President of National Agriculture and Food Research Organization (NARO)  
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Mr. SUZUKI, Kenta, governor of Akita Prefecture  
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Dear Minister, President, and Governor,

The [IFOAM Seeds Platform](https://seeds.ifoam.bio/)<sup>1</sup> is an officially sanctioned Sector Platform of [IFOAM – Organics International](https://www.ifoam.bio/)<sup>2</sup>. In collaboration with our Regional Bodies and Sector Platforms<sup>3</sup>, we write to you on behalf of a vast global network of farmers, breeders, scientists, businesses and citizens committed to organic, agroecology and related forms of truly regenerative agriculture<sup>4</sup>. Our allies span all continents, from local agri-food systems to global trade, across a full range of stakeholders and occupational interests.

We are writing to you now to express our concerns and to offer constructive suggestions for how Japan may proceed with regard to new breeding techniques and genetic modifications, and their environmental release including market implications of such activities. In particular, we take this opportunity to highlight the case of Akitakomachi R rice, a patented variety developed through a novel ion-beam modification technique, intended to be a variety with low uptake of cadmium from the soil.

We and our allies underscore our support of innovation that is ecological, transparent and participatory. We have also consistently seen no evidence to support anything but a precautionary approach to genetic engineering, and continue instead to advocate for and contribute to innovations in line with [organic principles](https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic)<sup>5</sup>. To this end, we offer a scientifically grounded, practical framework designed to protect ecosystems, citizen trust, human health and safety, and assure optimal support for businesses and the food supply chain, namely our [Global Safety & Risk Assessment Protocol for New Genomic Technologies](https://seeds.ifoam.bio/wp-content/uploads/2025/05/Global-Safety-Risk-Assessment-Protocol-v1.pdf)<sup>6</sup> (referred to here forward as our “Risk Protocol”). Ion beam breeding is a new technique of targeted mutagenesis – different from the long-used past technology of gamma radiation breeding – and falls into the category of new genomic techniques covered by our [Risk Protocol](https://seeds.ifoam.bio/key-resources/).

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<sup>1</sup> <https://seeds.ifoam.bio/>

<sup>2</sup> <https://www.ifoam.bio/>

<sup>3</sup> <https://www.ifoam.bio/about-us/our-network/regional-bodies> and <https://www.ifoam.bio/about-us/our-network/sector-platforms>

<sup>4</sup> <https://www.ifoam.bio/news/elevating-truly-regenerative-agriculture>

<sup>5</sup> <https://www.ifoam.bio/why-organic/shaping-agriculture/four-principles-organic>

<sup>6</sup> <https://seeds.ifoam.bio/wp-content/uploads/2025/05/Global-Safety-Risk-Assessment-Protocol-v1.pdf>. For other language translations including Japanese, go to <https://seeds.ifoam.bio/key-resources/>.

While we appreciate the intention on its surface that Akitakomachi R yields a low-cadmium crop, the empirical evidence taken from laboratory analyses of this novel variety also shows at least one significantly negative, unintended effect - namely the associated low uptake of manganese<sup>7</sup>, an essential micronutrient for crops, livestock, and human health. Furthermore, the genetic change made to Akitakomachi R – the destruction of a single base pair of the OsNramp5-2 gene by heavy ion beam exposure – is recessive. This may cause "inbreeding depression" making it difficult to maintain the variety and crossbreeding with other varieties also causes the loss of the desired trait. This can result in a crop that won't meet desired expectations and will lose its value for farmers as well as fall short of consumer expectations.

We respectfully submit that more diligence should have been done on Akitakomachi R before approving such a massive environmental release, as the agronomic disadvantages of it may well outweigh the originally purported benefits. Given the unintended negative consequences of its biochemical profile – *of which there is still only partial knowledge* – it would have been more prudent to apply our [Risk Protocol](#) in full before allowing such a widespread environmental release and market influx of the crop.

We are also very much concerned that that no labeling is required to show that Akitakomachi R is a GMO variety, or to track its movements – thereby depriving consumers of their fundamental rights to choose non-GMOs, and weakening possibilities for further controls as the MAFF may deem necessary. We are further concerned that the MAFF has determined that Akitakomachi R is eligible for JAS organic certification. Based on the principle that genetic modification is strictly prohibited in certified organic products, including seeds, we firmly reject Akitakomachi R qualification for JAS organic certification, and strongly recommend that the MAFF reverse its position on this point.

Inclusion of non-compatible varieties in organic – Akitakomachi R or any other that may come into being – is strongly rejected by the organic community. Known allowance would raise a significant inconsistency with the principles and requirements of the IFOAM Family of Standards, thereby compelling IFOAM to reassess JAS' alignment with the global norm. It may also damage Japan's reputation and its export market, leading to the questioning of equivalency agreements, and trade disruptions. Confidence in organic among Japanese consumers would likely be severely shaken and could significantly hinder the growth of organic markets in Japan and beyond.

Corrective measures going forward can and should be implemented. An immediate remedial action could be to require the traceability of Akitakomachi R through the supply chain and the assurance that it remains segregated from the JAS organic stream of commerce, accompanied by communications from the MAFF to all stakeholders to enable such actions and assure confidence across the value chain. Further technical study of Akitakomachi R as to its potential risks is also warranted, from ecological, agronomic, and human health standpoints; our [Risk Protocol](#) offers guidance on how stakeholders can collectively arrive at a conclusion that considers the maximum public benefit.

We acknowledge that the scientific development of new genomic techniques is ongoing and their marketization could increase in the future<sup>8</sup>. As artificial intelligence accelerates its capabilities, forward-thinking regulation becomes more urgent, not less. Our governance must be equally sophisticated and responsible. Detection

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<sup>7</sup> <https://www.pnas.org/doi/10.1073/pnas.1211132109>

<sup>8</sup> [https://www.enga.org/fileadmin/user\\_upload/New\\_GMOs\\_Market\\_Report.pdf](https://www.enga.org/fileadmin/user_upload/New_GMOs_Market_Report.pdf)

methods and technologies<sup>9</sup> are also becoming more sophisticated – a valuable tool policymakers should support and further develop as part of a robust regulatory framework.

As a global alliance however, we continue to exclude the usage of new genomic techniques (as well as older forms of genetic engineering) for the purposes of organic agriculture, as outlined in our position paper on genetic engineering and breeding techniques<sup>10</sup>. The ion-beam technology used to create Akitakomachi R would clearly fall into this same prohibited category, as it not aligned with Organic Principles as described in the aforementioned Position Paper.

There are well-documented, effective alternatives to genetic engineering such as organic and agroecological systems, which are proven to enhance resilience, productivity, and biodiversity while supporting farmer livelihoods<sup>11</sup>. Genetic engineering (call it GMO, NGT, or whatever else) is a far-reaching technology, but should by no means be thought of as a silver bullet. The products of it currently do not meet any of the purported sustainability promises. A more holistic solution is necessary.

If allowed without well-rounded and transparent risk assessment, NGTs and GMOs offer a narrow fix at best, liable to repeat the cycle of dependency and ecological harm that earlier genetic engineering applications have created<sup>12</sup>. Any claims toward urgency to bring these unproven products to market or environmentally release them without adequate risk assessment are based on incomplete understanding of ecology, and/or economic incentives that would expose the public to undue risks for sake of the profit by select industry parties.

We also respectfully point out that Japan, as a signatory to the Cartagena Protocol, must take heed of this international agreement and their corresponding commitment to adequate risk assessment of new genomic techniques<sup>13</sup>. We encourage the MAFF to adopt and enforcing the Global Safety & Risk Assessment Protocol for New Genomic Technologies and fulfill obligations under this agreement.

Genetic engineering is one of humanity's most powerful tools ever invented — arguably more powerful than ourselves. Failure to regulate new genomic techniques adequately will have consequences on ecosystems, human health risks, and undermining trust in food systems with spillover impacts on regional and global trade. The potential impact of new genomic techniques is so far-reaching that both social and natural sciences must be taken into consideration by policymakers. Our Risk Protocol encompasses both disciplines.

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<sup>9</sup> See for example <https://www.sciencedirect.com/science/article/pii/S096399692501556X>.

<sup>10</sup> See <https://www.ifoam.bio/genetic-engineering-and-genetically-modified-organisms> and <https://www.ifoam.bio/compatibility-breeding-techniques-organic-systems>.

<sup>11</sup> [https://www.organicseurope.bio/content/uploads/2022/04/IFOAMEU\\_advocacy\\_organic-benefits-for-climate-and-biodiversity\\_2022.pdf?dd](https://www.organicseurope.bio/content/uploads/2022/04/IFOAMEU_advocacy_organic-benefits-for-climate-and-biodiversity_2022.pdf?dd) and [https://ota.com/sites/default/files/docs/The%20Science%20Behind%20Organic\\_update.pdf](https://ota.com/sites/default/files/docs/The%20Science%20Behind%20Organic_update.pdf)

<sup>12</sup> <https://enveurope.springeropen.com/articles/10.1186/s12302-023-00787-4> and <https://enveurope.springeropen.com/articles/10.1186/2190-4715-24-24> and <https://www.gmwatch.org/en/news/archive/2019/19499> and <https://www.saveourseeds.org/news/bitter-harvest-30-years-of-broken-gmo-promises/> and <https://link.springer.com/article/10.1007/s12892-024-00273-0>

<sup>13</sup> <https://www.bmleh.de/SharedDocs/Downloads/DE/Landwirtschaft/Gruene-Gentechnik/NGT-Gutachten-EU-Vorschlag.html>



We remain available for any exchanges to discuss our Risk Protocol in further detail, and how it may be best adopted by the MAFF for the benefit of Japan and its people.

With respect and urgency,

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IFOAM Seeds Platform

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