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222 Evans Road, Glenwood, Durban, South Africa Tel: +27(0)31 206 2954 Fax: +27(0)86 510 1537 www.biowatch.org.za

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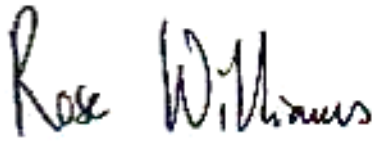
Attention: Ms Nompumelelo Mkhonza
The Registrar: Genetically Modified Organisms Act, 1997
Directorate Genetic Resources
Department of Agriculture, Forestry and Fisheries
By email: GMOAppComments@daff.gov.za

Objection submission to GM permit application for GM maize DP-056113-9

Please find our objection submission on the permit application by Pioneer Hi-Bred RSA (Pty) for the intentional introduction (trial release) of GM maize event DP-056113-9

Yours sincerely



Rose Williams
Director

Biowatch South Africa

Biowatch is a non-governmental organisation established in 1999, which strives for social and environmental justice within the context of food sovereignty. Biowatch works to challenge unsustainable agricultural practices and to advocate for agroecology as an ecologically viable alternative that safeguards people and land. This includes supporting smallholder farmers; working with civil society to create joint understanding and action; and constructively engaging with government in implementing policies and practices that promote, facilitate and actively support agroecology and farmers' rights. We have a long track record of working on policy issues concerning agriculture, biodiversity and indigenous knowledge systems.

Comments on the application

Biowatch SA objects to the granting of a permit for GM maize event DP-056113-9 and has the following concerns and questions.

This GM maize event is being developed as part of the Seed Production Technology for Africa (SPTA) project. This arises out of the Improved Maize for African Soils (IMAS) project, aimed at breeding hybrid maize that makes more efficient use of nitrogen. Both projects are funded by the Gates Foundation in partnership with the public and private sector.

The SPTA project intends to provide inbred parent lines to small seed companies for the mass production of hybrid maize to supply smallholder farmers, where the female parent has sterile pollen and the parents are already "optimised for nitrogen use efficiency".

Despite the rhetoric that this project is intended to benefit smallholders, the development of the SPTA technology is instead rather to the benefit of the commercial seed industry. This specific GM maize event is intended to produce seed that will be used as the female parent line for hybrid seed production. Having sterile pollen prevents this parent line from self-pollinating and thus saving the breeder from manually or mechanically de-tasselling female parents, which adds to production costs and lowers the purity and volume of hybrid seed produced.

We understand from the limited literature on this process available in the public domain that the gene conferring pollen sterility is recessive, and fertility is restored in the resulting non-GM offspring when crossed with a non-sterile male parent. We also understand that the offspring of these crossings are half sterile non-GM plants for taking into the breeding of the hybrids and half non-sterile GM plants, which would be kept back as part of the SPTA inbred parent line based on their identification through expression of red fluorescent protein arising from the DsRed2 gene in the GM construct.

We have the following concerns about this GM event and the related breeding process:

1. Since part of the progeny are non-sterile GM plants how will containment of this field trial be managed, but more importantly how will the future management of this GM maize in the production of hybrid parent lines be undertaken should this process be commercialised and extend to small breeders in South Africa and across the continent. It is not sufficient to just destroy volunteer plants as the pollen from this GM maize could also be spread in the environment resulting in the unintended spread of pollen sterility with unknown consequences for farmers using open-pollinated varieties.

2. We also are concerned, given the limited evidence, about Pioneer Hi-Bred RSA's assurance that sterility will not be passed on or express in subsequent generations over time, even when crossed with other GM events (as is likely to happen in hybrid production) that have greater

potential for instability and related unintended gene expression or when crossing with OPVs that will be saved and replanted many times.

3. Biowatch, in a pilot study, has found GM genes have contaminated traditional smallholder maize varieties in areas where the farmers have actively sought to avoid GMOs and keep their varieties pure. We are very concerned that should these genes in any way escape from the confines of breeders' fields and into the broader seed system that this will contaminate smallholder seed systems.

4. This GM event makes use of RNA interference technology to silence the expression of the Ms44 gene, to restore pollen fertility. RNA interference is a new GM technology that has not previously been used in South Africa. Its safety remains internationally controversial due to the potential to silence other genes in the plant, with unknown consequences, as well as other organisms through horizontal gene transfer. There is also concern for eating food containing these genes which are likely to remain intact in the digestive process and enter the body. The state should not continue to allow its citizens to be experimented upon, especially in a context where maize is a staple food of the poor.

5. There are also negative socio-economic and environmental consequences of the SPTA project:

   The intention of the project is to flood smallholders with more "modern" hybrid varieties. We argue that this is not the support that smallholders need. These hybrid varieties, which often are genetically engineered for herbicide resistance, are expensive and bred to require synthetic chemical inputs and irrigation. Even if these are bred to require less nitrogen the intention is still to supply more synthetic fertiliser and other inputs to these farmers. This 'green revolution'/ massification approach is well-documented to have failed in many areas including in their delivery in South Africa. These hybrids are and will continue to displace traditional varieties of seed that have adapted over time to the production conditions and cultural needs of smallholder communities, and which Biowatch has proven outperform hybrid varieties when smallholder production systems are appropriately supported. Hybrid maize not only displaces traditional varieties of maize but also forces monoculture cultivation that displaces other traditional crops and a wide variety of greens that are part of traditional smallholder mixed cropping systems.

6. Adequate soil fertility, required for healthy crops and the nutrition of the people and animals consuming those crops, extends far beyond adequate quantities of nitrogen to the need for diverse nutrients, and healthy soil life including fungi and microbes. This life and its ability to make nutrients available to plants and to sequester carbon, is destroyed by the industrial farming system, which will be extended through the SPTA project, to the detriment of existing sustainable smallholder farming systems.

We urge the Department to provide greater support to climate resilient and regenerative agroecological farming systems, with their diversity of traditional seed varieties, rather than the narrow interests of the corporate seed and chemical industry. We submit that it is not in the interests of the people of South Africa or the environment to have this GM event approved.