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Ecological farming and smart breeding: the innovation and technology needed for modern farming

– GE potatoes are risky and not needed to solve toxic problems of potato farming –

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Greenpeace campaigns for sustainable agriculture. Pesticide use, biodiversity loss, climate change, genetic contamination from genetically engineered (GE) crops and other unsustainable practices by the industrial agriculture model are some of the reasons to demand a fundamental change in the way we produce and consume food. Greenpeace proposes a paradigm shift towards ecological agriculture which promotes biodiversity and does not pollute the environment with GMO's, pesticides and other chemical inputs.

Greenpeace opposes the introduction of GE crops into the environments and the food chain. Long term risks of these crops to the environment and human health are not sufficiently understood and introduction in agriculture could lead to irreversible genetic contamination. Furthermore the cultivation of GE crops goes hand in hand with chemical inputs, fertilizers and pesticides, which are ruining our soil fertility and increase dependencies of farmers [1].

The GE potatoes in the debated field trial in Switzerland are a product of Dutch researchers. This government funded project comes with a big PR push for the acceptance of GE by farmers and consumers and a political lobby to allow cisgenesis. Greenpeace Netherlands has been opposing the trials in the Netherlands and campaigns for the adoption of ecological solutions for late blight (*Phytophthora*) in potato cultivation – the purpose of engineering these potatoes. GE free solutions to spraying of chemical fungicides against blight are:

1. GE free resistance breeding: Dutch breeders, scientists and farmers bred 6 blight resistant potato cultivars with smart breeding strategies [2]. These are available, have proven effective in the field and are available for farmers and retailers. Organic breeders have a much wider scope than only blight resistance and also involve issues such as resistance other pests and diseases and nutrient efficiency in their programs. Smart breeding technologies such as Marker Assisted Selection could help breeders in speeding up making more sustainable crop varieties available for farmers [3];
2. More diversity in and around the fields: industrial farmers apply very short rotations of their crops. This leads to monocultures and decrease of agro biodiversity. Planting a broader variety of crops makes the agricultural system less vulnerable for pests and diseases and decrease the need for chemical inputs [4]. Promoting biodiversity around arable fields provides farmers with pest suppression and reduces the use of chemical pesticides [5].

GE blight resistant potatoes are a risky end-of-pipe-solution for fundamental failures in the industrial farming model: monocultures, a single focus on productivity in breeding and fighting pests and diseases with chemical inputs, further undermining the resilience of farms.

Therefore a real solution to spraying chemicals against blight can be found in changing the root causes of crop pests and disease: more diverse farming systems, more biodiversity in crops and around fields and smarter breeding for stronger and healthier crops.

Farmers' knowledge and experience is crucial in selecting the right crop varieties and production for more sustainable food. Fair prices, better government policies and retailers promoting solutions should be focused on the change to ecological farming methods.

Allowing GE potatoes would frustrate the needed change to more organic farming. It is expensive and experiences show that GE free production gets more costly because of the need of contamination prevention - if that's possible.

Greenpeace Netherlands closely cooperates with Bionext and the Louis Bolk Institute. The three organizations reaches out to politicians, farmers and consumers for adoption of ecological and organic farming. To make people aware of sustainable alternatives to the highly promoted GE potatoes, the three organizations initiated 'Het Pieperpad' [6]. A more than 1000 km long bike trail which enables people to meet organic farmers who breed blight resistant potatoes in cooperation with scientists. Bikers can rest and enjoy an organic potato meal at participating bed & breakfasts along the road.

The Dutch potato industry does not support the introduction of GMO's. This became clear when the chemical company BASF wanted to introduce its Amflora potato on Dutch fields [7]. Consumers demanding their plates free of GMO's, rejection of GE in export markets and availability of feasible GE free solutions are the reasons for this stance.

More information

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