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Latin American Scientists Reject Nobel Laureates' Letter Supporting Genetically Modified Crops

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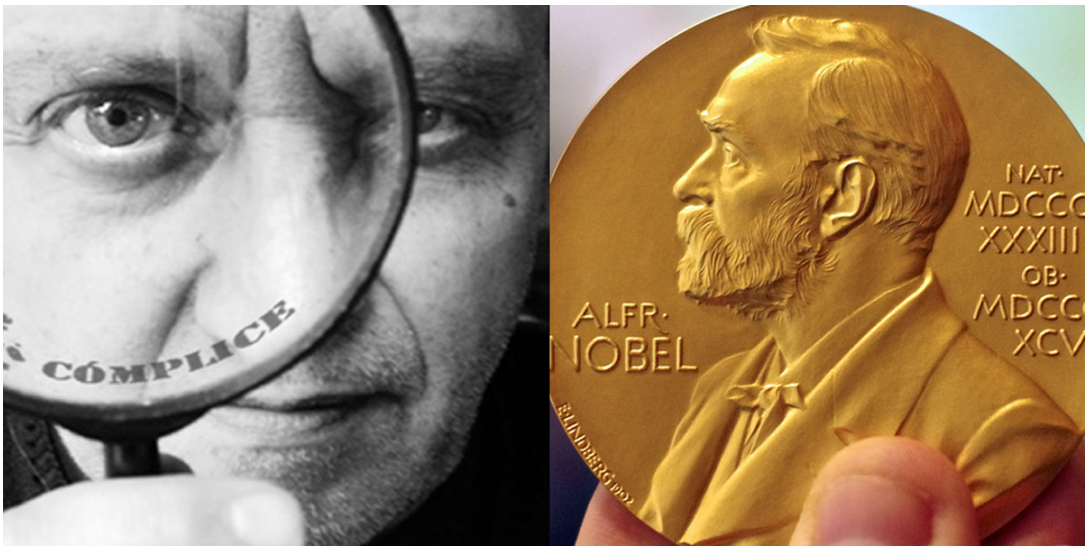
GMO supporters "have discarded rigorous science", says the Union of Latin American Scientists Committed to Society and Nature (UCCSN-AL)

The Union of Latin American Scientists Committed to Society and Nature (UCCSN-AL) has issued a statement rejecting the letter signed by Nobel Prize laureates in favour of genetically modified crops and GMO golden rice.

About GM crop science in general, UCCSN-AL says:

> [Transgenesis] cannot be considered an advanced science anymore because it is based on fallacious and anachronistic assumptions. Its defenders have oversimplified the scientific rationale behind GMOs to the point that the technology cannot be considered valid anymore: they have discarded rigorous science. The lack of scientific ground that justifies GMOs is also the reason why its promoters deny complex systems of knowledge, such as indigenous peoples' cultures and livelihoods. Transgenic technology is the geopolitical instrument for colonial domination of our time (1).



Feeding the world?

UCCSN-AL says it is not convinced that GM crops are needed to feed the growing population:

> The four GM crops that are marketed massively are mainly intended for the production of biofuels and animal feed for poultry, pork and beef cattle industries: activities that consume more than 65% of the GM corn and soybean

> produced in the few countries that grow them, a very inefficient system from an energy point of view of agricultural production. Around these crops there is an oligopoly of transnational corporations that control the production of seeds and grains; the storage, transportation and marketing of genetically modified commodities; and the mass production of animals, which are increasingly concentrated in fewer hands. In this regard, it is clear that this model does not contribute to the goal of feeding the world, but instead competes with and overpowers traditional food production...
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> The problem of lack of food is not caused by low production, but by the way the world food system is designed. It has undermined the traditional systems of food production, and therefore nutrition and food sovereignty of peoples.

Under the heading, "GM crops do not produce higher yields", UCCSN-AL says:

> We question the promises made by GMOs proponents that these crops would have higher yields. Each of the countries in the Southern Cone where GM soybean is grown has different performance. The highest yields are registered in Brazil and Argentina, where the national agricultural research centres have dedicated many years to conventional breeding of this crop. On the other hand, in Ecuador, a GM free country, soybean yields are higher than in Bolivia and Paraguay.
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> Another example is canola or rapeseed. In Canada (where they mainly use GM seeds), yield averages between 1986 and 2010 were 1,459 kg/ha, whereas in Western Europe, where conventional seeds are used, the average yield in the same period was 3,188 kg/ha (2).

These data indicate, the group says, that GM does not increase yields and that any yield gains seen in crops are not due to GM but to other factors: "Ecosystems are complex and dynamic, involving the interaction of multiple factors."

Health risks of GMOs

Regarding impacts on health, UCCSN-AL states:

> Scientists who defend the safety of GM crops and food argue that it has been consistently found that GMOs are as safe (or more) than the crops obtained with any other breeding methods; that they do not produce environmental impacts and that even they increase global biodiversity. Despite these statements being repeatedly invoked by GM proponents, they are not backed by serious scientific research, and, moreover, the claims are never referenced". In contrast, in the last years, scientific evidence supported by independent researchers has grown, showing the environmental and human health problems related with cultivation and consumption of GMOs (3).

The scientists comment that the health risks of GMOs inevitably include the risks posed by the herbicides that GM herbicide-tolerant crops are grown with:

> In the analysis of GM crops we must consider the technological package to which these crops are inextricably associated. The majority of GM crops are resistant to herbicides, mainly the questioned glyphosate. In Latin America (the region with the fastest increase of GM crop acreage), the negative impacts on human communities settled in the areas where these crops are grown are

undoubted.

> In the last decade, the health conditions of these populations has been depressed, there has been a significant increase of cancer, congenital malformations, genetic damage, autoimmune diseases and other health issues, associated with the pesticides and the practices that are part of the technological package of GM cultivation. It is clear that to evaluate the impacts of this technology it is impossible to analyse GM seeds individually when the main genetic modification is to make the plant resistant to a herbicide. In the environment it has been shown that water bodies are contaminated and that pollinators are declining, as well as other beneficial species that ensure the health of the soil and the local biodiversity.
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> Furthermore, there are millions of hectares planted with GM seeds containing a gene that allows them to synthesize the Bt toxin, an insecticide that is produced in the GM plant, which has been incorporated to control Lepidoptera larvae. However, it has been shown that this toxin indiscriminately affects different species of insects, reducing their biodiversity and damaging human health of those who are in contact with the toxin (4).

On GM crops in general, UCCSN-AL concludes that "Every day there is more medical, scientific and agronomic evidence showing the impacts, risks, and uncertainties of this irrational model of production, both for the health of rural workers, peasants and farmers, as well as for these rural residents and consumers of foods produced with this technology."

On GMO golden rice

UCCSN-AL explains that "Golden rice was designed... as a generic drug for malnourished children in 'poor countries'", adding that "Several authors have criticised this technology (5), which, in fact, is not available due to the fact that its advocates have failed to reach a workable formulation for distribution."

In fact the rice is not even ready for commercial production, let alone distribution, as it has failed to give sufficiently high yields in the field, as the IRRI, the body responsible for rolling out the crop, has admitted.

UCCSN-AL has further concerns over the promotion of golden rice as a solution to hunger:

> The nutritional problems of a population are not related with the lack of a specific nutrient (in this case... pro-vitamin A), but with the general conditions of poverty and the loss of food sovereignty that has forced thousands of farmers communities to leave their lands or to be subordinated to agribusiness, whose only priority is to meet their voracious need to increase profits through monoculture, agroindustry and agro-export by occupying lands that used to be devoted to safe and nutritious food production. To believe that malnutrition problems will be overcome through bio-fortified genetically modified food is to ignore this reality.
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> In order to meet the golden rice demand, millions of hectares will need to be planted in tropical and subtropical areas, and will need to expand over territories that today are use to grow food sovereignty crops, which will face the typical problems associated with large-scale monoculture. In addition, hundreds of plant species rich in pro-vitamin A, known, gathered or cultivated for a long time by local communities in the entire world will be affected. Each community can and must choose, in a sovereign way, what to eat, according to their cultural preferences and traditions, and how to meet their nutritional

needs.

Who will benefit from golden rice? As with other GM crops, golden rice will also be controlled by large agribusiness companies. The "nutritional scheme" based in golden rice will involve the control of agribusiness over the whole value chain: from seed to distribution. Given the fact that it is a global trend to forbid farmers to save their seeds, even if golden rice will be patent-free, the seed will be corporately controlled. What would happen then with traditional rice producers and with the thousands of peasant traditional varieties of rice that they hold?

Regarding trade, in many countries, rice producers do not have any influence in price fixation. Nationally, the price is set by local powerful groups that control both processing and distribution of rice. Internationally, the price is set at the Bangkok and Chicago Stock Exchange. The international trade of golden rice would be controlled by the same economic groups that control other GM commodities. Accordingly, golden rice will not generate food sovereignty and, on the contrary, it will increase dependence for both producers and consumers.

All the funds that would be spent in the promotion and implementation of 'golden rice' crops around the world could be used in the promotion of diversified crops, to promote and strengthen local and regional nutrition and food sovereignty, as well as in the recovery and adoption of healthy eating habits.

Nobel Prize rewards research that encourages corporate control

UCCSN-AL questions the authority and independence of the group of Nobel laureates that signed the letter:

The science that is promoted by the Nobel Prize Laureates that signed the letter has been developed in a context dominated by a reductionist techno-science, that is being developed without social control, generating environmental problems and health impacts, often with catastrophic and irreversible effects.

Although formally the Nobel Prize aims to recognize and reward people who have done outstanding research, invented revolutionary techniques, or have made notable contributions to society in the areas of Medicine and Physiology (and in other fields), it has supported scientific research that encourages corporate control on productive processes, and has facilitated the privatization of knowledge and life. In the field of biotechnology, the Nobel Prize has recognised waves of scientific innovations that led to the development of genetic engineering, at the expense of technologies with wider application which are not controlled by oligopolies of transnational corporations. Several of them are signatories of the letter. Their activities have been the key to developing the biotechnology industry. Several still hold commercial interest in this area, or are involving in research funding by the industry. For example, one of the promoters of the letter, Phillip A. Sharp, is co-founder of Biogen (now Biogen Idec) Inc. and Alnylam Pharmaceuticals, Inc. (a pharmaceutical company that develops drugs based on RNAi) – which UCCSN-AL says represents a clear conflict of interest, given that the letter was submitted under the guise of "altruistic interests".

Not the first Nobel laureates' letter defending GMOs

UCCSN-AL points out that this is not the first statement defending GMOs issued by Nobel laureates:

> Some years ago, a similar declaration was promoted by Norman Borlaug, father of the Green Revolution (1970 Nobel Prize), who saw a second Green Revolution in agrobiotechnology, without making any critical analysis of the impacts caused by the first one.
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> Previously, Paul Hermann Müller was awarded with the Nobel Prize in Physiology and Medicine for the discovery of DDT as a contact poison of high efficiency against many arthropods. Ironically, due to the dramatic effects of DDT on the environment and on human health, the scientific work and citizen mobilization against pesticides began, a struggle that still continues.
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> Now the signatories of this letter in defence of GMOs and golden rice privilege the paradigm of corporations that genetic uniformity is needed to raise production. This is particularly serious because we know that the genetic diversity is essential to deal with hunger and is the only alternative to climate change.
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> With this background we wonder if the opinion of Nobel Prize laureate scientists necessarily is an irrefutable, neutral and objective opinion. The background presented here, and the lack of robust and well-founded arguments of the letter, show that this is not the case.
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> A[t] UCCSN-AL we believe that decision-making process on the adoption of new technologies, such as those that make possible GM crops, and others that are emerging (e.g. nanotechnology, synthetic biology and geo-engineering), should not only involve the so-called "hard scientists", but it must incorporate the opinion of other fields of knowledge, as well as the opinion of social movements, civil society organizations, and of legitimate representatives of different social groups. Because scientific and technological knowledge is always part of a social process, it is crossed by tensions, conflicts and contradictory interests. Science is never neutral, absolute or definitive; it is always susceptible to changes and revisions, and must be subjectws to permanent debate.

"Genocidal" role of industrial farming based on GM crops denounced

UCCSN-AL concludes, "Scientific work must be developed with ethical responsibility and it must be committed to nature and society, and because of that, we reject the concepts stated in the letter and denounce the genocidal role of industrial farming based on GM crops, and we stress the need to defend, promote, and multiply the modes of food production that were culturally developed by the peoples of our region, and therefore are vital to ensure autonomy, environmental sustainability, safety and food sovereignty."

Notes:

(1) http://uccsnal.org/documento-constitutivo-de-la-union-de-cientificos-comprometidos-con-la-sociedad-y-la-naturaleza-de-america-latina/
(2) IICA. Indicadores 2012
(3) There are for example the studies done by research teams from Universidad Federal de Santa Catarina and Fiocruz in Brazil; GenØk in Norway, the faculties of Medical Sciences in Rosario and the Universidad de La Plata in Argentina; the University of Milan in Italy; and the University of Caen in France, to name just a few.
(4) See for example Vazquez et al. (2000). Brazilian Journal of Medical and Biological Research 33: 147–155. Finamore, et al. (2008). "Intestinal and Peripheral Immune Response to MON810 Maize Ingestion in Weaning and Old Mice," J. Agric. Food Chem. 56 (23): 11533–11539.
(5) See Stone and Glover (2016). Agric Hum Values. DOI 10.1007/s10460-016-9696-1

Source (Spanish): UCCSN-AL – http://uccsnal.org/la-uccsn-al-frente-a-la-carta-de-un-grupo-de-premios-nobel-en-apoyo-a-los-cultivos-transgenicos/
