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## THE CONSEQUENCES OF USING GMO AND THE EFFECT OF TRANSGENES ON LIVING ORGANISMS

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*У статті розглянуто вплив продуктів ГМО на живі організми та на характеристики харчових продуктів, що містять трансгени. Деякі ГМО можуть відігравати позитивну роль у забезпеченні сталого сільськогосподарства, лісового господарства, аквакультури, біоремедіації та управління навколишнім середовищем як у розвинутих країнах, так і в країнах, що розвиваються. Проте, навмисні або ненавмисні викиди ГМО в навколишнє середовище можуть мати негативні наслідки для довкілля за певних обставин.*

*This article deals with the effect of GMO products on living organisms and on the characteristics of foods containing transgenes. Some GEOs could play a positive role in ensuring sustainable agriculture, forestry, aquaculture, bioremediation and environmental management, both in developed and developing countries. However, deliberate or unintentional releases of GEOs into the environment may have negative environmental consequences under certain circumstances.*

The main problem raised in the article is whether GMOs have direct effects on living organisms and just how safe is it to eat GMO products and whether products differ from transgenes from normal ones.

The **purpose** of the article is to consider all the positive and negative aspects of the influence of GMO products on living organisms. What are genetically modified organisms and what are the risks of their use. And just as the organism changes when a transgene is introduced into it.

The rate of development of world production using genetically modified organisms (GMOs) is impressive. Products with transgenes do not differ from ordinary ones neither taste, nor color, nor odor. Often they are used for the production of cooked sausages, canned meat, beer, chips, various sauces, instant soups, chocolate, syrups and even baby food. That is, they are present in those products that contain modified soya. Genetically engineered (GE) organisms provide the potential for significantly increased agricultural production, but may also represent environmental risks. Methods have been developed to predetermine such risks under safe conditions. These methods can also be used to some extent to determine the potential invasiveness of exotic organisms.[3]

The use of food, containing GMO, according to scientists, can lead to cancer ictus, allergic reactions, infertility and to become a source of other dangerous ailments. For example, the "introduction" of the Brazilian nut gene into soybean DNA (to increase the protein content) has led to the fact that this agro-culture has become dangerous for people suffering from allergy to nuts. Most known transgenic plants resistant to herbicides are able to accumulate them. This fact has been confirmed by the experiments with rats consuming genetically modified soybean, resistant to herbicides. These animals, subsequently reproduced to the world inferior offspring where more than 50 % of individuals were unviable [2].

The Environmental Society supports the following recommendations: 1) GMOs should be developed to reduce environmental risks. 2) more extensive research is needed on the environmental benefits and risks associated with GMOs. 3) these effects should be evaluated against the corresponding baseline scenarios. 4) The environmental release of GEOs should be prevented if scientific knowledge of possible risks is clearly insufficient. 5) In some cases, post-release monitoring will be necessary to identify, manage and reduce environmental risks. 6) Evidence-based regulation

should expose all transgenic organisms within the framework of such a risk assessment and should include a cautious approach, recognizing, that many environmental effects are geographical ones- and belong to specific areas [1; 4].

In *conclusion* it should be mentioned, that it is difficult to state for sure, that GMO products are harmful or, on the contrary, have a positive effect on living organisms. If we consider the situation from economic point of view the creation of GMOs is definitely a winning one and carries a huge profit, but from the side of ecology we see negative changes. Despite these facts, it should be taken into consideration, that long-term studies of the safety of transgenic products have not been carried out, so no one can accurately confirm any negative impact on humans as well as to deny such an opportunity.

## **References**

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