

GMO Facts and Myths

Genetically modified organisms have grabbed the attention of producers, consumers, and politicians. Years of public discussion have raised many arguments of a political, religious, and ethical nature, but unfortunately scientific and economic arguments only rarely get addressed. Almost no mention is made of the fact that genetic engineering is merely a tool, like a hammer, car, or computer. Specific articles developed by applying the intellectually advanced tools of genetic engineering (bioinformatics, genomics, proteomics) are now yielding us products of everyday consumption, such as ham, washing powder, hormonal medication, or diagnostic methods. The aims and tasks of genetic engineering can be formulated precisely as the job of breeding was defined in past centuries. In altering the properties of living organisms, a genetic engineer is NOT doing anything new today, anything different from what has been done in the past. Mankind has always imitated nature and tailored organisms to suit our own, human needs. COMMERCIALIZATION, on the other hand, is a completely different issue and must comply with legislation, abiding by biosecurity rules set forth by law. Public perception also has to be taken into account.

Because of better economic performance and profits for agricultural producers, world acreage of commercially cultivated transgenic crops has surged from zero to 114 million hectares since 1994. Three quarters of all farmers using transgenic crops are small agricultural producers in poor countries (China, India). In Poland, the acreage planted with transgenic maize resistant to the European corn borer has risen by 1000%. That can be put down to a simple calculation: 40% of "classic" maize crops get destroyed, so it quite simply pays to farm the transgenic variety.

Biotechnologies spark ambivalent emotions among society. Overall, public opinion can be presented as follows (of course simplifying things somewhat): society is 70% opposed, experts are 90% in favor, producers and traders are 70% in favor, while politicians follow their voters' opinions. As a consequence, political decisions are made on the basis of widely-held opinions, rather than on expert evaluations. Nevertheless, GENETIC ENGINEERING IS HERE TO STAY. Humanity is quite simply not in any position to forego the use of "green" biotechnology (the agricultural and agrifood sector), "white" (industrial) biotechnology, or "red" biotechnology (medicine, pharmacy, veterinary medi-

cine, and diagnostics). The advancement of biotechnology spurs economic growth. It is crucial for the production of innovative drugs (like hormonal medications, which cannot be produced other than through genetic engineering). Similar things can be said for the production of bioenergy or biodegradable plastics. The fundamental question is very simple: Will Poland just be a market of 38 million consumers, or will we develop an industry to harness these modern, innovative technologies and to employ our own top-caliber professionals? After all, our country educates around 1,000 biotechnologists every year! More than a dozen Polish higher education institutions offer biotechnology majors, giving young people solid qualifications, yet Poland's biotechnology industry remains very limited.

The upshot: we are not creating jobs for them, but we do have a large market of consumers. A modern society striving to improve its standard of living cannot forego the use of hormones, biodegradable packaging, or renewable energy sources. We have a duty to leave behind to our children a better-quality environment than was bequeathed to us by past generations.

Consumers - meaning all of us - elect politicians, while at the same time we may be producers, traders, politicians ourselves. Within the society-producers-politicians dependency triangle, decisions need to be based on docu-

mented, reproducible experimental data, not on common opinions guided by unconfirmed fears. An honest scientist will never claim anything is certain, safe, or 100% tested. The advancement of knowledge, after all, is based on debunking "certain and indisputable assertions." Of course, in this context questions do arise as to whether we are certain we need this new field of science and that the technology will not cause "something bad." The answer to both questions is relatively simple and clear-cut: we as a society cannot afford to forget modern technologies. We cannot consume something while not producing it. A certain risk factor is always associated with innovations and novelties. Thus we should not be afraid of biotechnologies and GMOs. ■



Does Poland just want to be a market of consumers? We cannot afford to forego the use of advanced technologies

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