Testbiotech warns against using synthetic algae

The risk to the environment from artificial organisms could get out of control
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Artificial organisms are being developed to produce new kinds of biofuels with a higher efficiency, so called “synthifuels”. Testbiotech is today releasing a new report on Synthetic Biology, which draws attention to the economic interests behind synthifuels and the risk associated with synthetic Organisms.

Cyano Biofuels, based in Germany, is one of the companies involved in a publicly funded project aiming to find ways of changing the metabolism of cyanobacteria. In 2010 these synthetic organisms will be tested in pilot production sites for the first time. Cyano Biofuels belongs to the US company Algenol. Algenol has plans to build a huge algaebiofuels plant in the Pacific region of Mexico. In its report, Testbiotech is warning against using manipulated organisms such as the ones from Germany in these kind of biofuel plants. If, for example, hurricanes damage the production sites, the cyanobacteria might be transferred over long distances into the sea. Experts believe that in the long run, organisms such as synthetic algae cannot be prevented from escaping into the environment.

“We are urging the German government to intervene in Cyano Biofuels plans and make sure that the synthetic organisms developed with public funding in Germany are not used in the planned Algenol production sites. Ecosystems may be severely endangered if these kind of algae escape into the environment. This case also shows that specific legislation is necessary to prevent any release of synthetic organisms into the environment,” says Christoph Then from Testbiotech.

Synthetic Biology applications change the metabolism of organisms so that they can be used for various industrial purposes. If those artificial organisms then escape into the environment ecosystems and biodiversity are at risk. Once released they hardly can be controlled or recalled.

The development of synthifuels is often justified by ongoing climate change. For example, lignocellulose and algae will be used to replace current petrofuels. However, Testbiotech’s study shows that real solutions can hardly be expected from synthifuels. To some extent, existing problems even will be exacerbated. Increased demand for resources for the production of new generation of biofuels means that large areas of forest and grassland will be needed and exploited to grow corn and oil seed. Synthifuels are in competition with agriculture and food production. Further valuable ecosystems will come under pressure from intensive usage.

It is obvious that huge business concepts are a driving force in this development. Some patent applications show that not only the synthifuels but also the vehicles using it are being claimed as an invention of the companies. The development of the new biofuels very often is driven by big multinationals such as Exxon, BP, Shell and Dow Chemical, which hope to gain new markets. Public money is also being massively invested in this technology.

In June 2010, Testbiotech released its first report on Synthetic Biology. By initiating a public appeal, the expert group is calling for specific regulation to protect ecosystems and biodiversity from the release of artificial life forms. Further, those institutions that are able to synthesize DNA should be subjected to tight controls to prevent abuse of the technology for the production of harmful organisms and infectious diseases. Testbiotech is also calling for a moratorium on public funding and for more public participation. The appeal is supported by several organisations in Germany and Switzerland.

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