

The Paraquat Principle

By Duane D. Freese

It's rarely wise to throw caution to the wind. But the precautionary principle? As it is currently promoted by some environmental organizations and practiced by some countries, it deserves to be blown away.

The problems of the principle received a thorough airing from its critics at a forum sponsored by the Marshall Institute, a Washington-based think tank focusing on science policy. The forum at the National Press Club, "Uses and Misuses of Science in Regulating Chemicals: Unintended Consequences for the Developing World," reviewed application of the precautionary principle to new biotechnology products, old restrictions on DDT, and new restrictions on an old tried-and-true herbicide, paraquat.

Henry Miller of the Hoover Institution, founder of the Food and Drug Administration's Office of Biotechnology, noted that environmental organizations don't seek just "prudent, safe use" of such old chemicals as paraquat or new biotechnology products "but their complete elimination."

"A large number of people in poor nations have food allergies," he pointed out, including to such common foods as milk, wheat, and nuts. "Biotechnology can remove the allergens...so people in developing countries can enjoy some of these foods."

But environmental groups, such as Greenpeace, are using the precautionary principle to oppose development of those products and others that would improve agricultural productivity — not, Miller argues, because they are

dangerous but because of a social vision that is "anti-business, anti-technology, and anti-American."

The Case of DDT

Roger Bate of the health advocacy organization Africa Fighting Malaria and a frequent contributor to TechCentralStation.com pointed out that the restrictions placed by developed nations on the pesticide DDT are especially dangerous to the health of people in poor countries.

The European Union's targeting of twelve chemicals for elimination, including DDT, based on the precautionary principle, ignores "the risk profiles of nations at different stages of development," Bates said. Poorer nations, in short, simply can't afford some of the more elaborate bureaucratic controls that rich nations place on the use of many pesticides, he argued.

DDT, he said, is vital to combating malaria, dengue fever, and locusts — scourges that still kill hundreds of thousands in developing countries. The controls put on DDT by the developed world, which can delay imports for nearly six months, are leading to black markets and the development of less-safe imitation chemicals, he said.

The precautionary principle's prescriptions, said Bates, "have hampered trade, are hurting economic growth, and are damaging health."

The Case of Paraquat

Some of the most serious questions about environmental groups' motives in using the precautionary principle came from the presentation by Prasanna Srinivasan of Business Environment Assessments, who is an expert on

Biotech Crop Acreage Grows at Double Digits

Acreage in transgenic crops continued to grow in 2003 for the seventh consecutive year at a double-digit rate of 15%, compared with 12% in 2002, according to a recent report, "Global Status of Commercialized Transgenic Crops: 2003" published by the International Service for the Acquisition of Agri-Biotech Applications (ISAAA).

The estimated total acreage was 67.7 million hectares (167 million acres), which includes an estimated 3 million hectares of transgenic soybeans in Brazil, officially approved for planting for the first time in 2003.

The number of farmers planting transgenic crops rose to 7 million in 18 countries from 6 million in 16 countries in 2002. The 15% growth rate amounts to 9 million more hectares (22 million acres) of farmland planted in transgenic crops.

Since 1996, farm acreage in transgenic crops around the world has increased 40 fold from 1.7 million hectares. An increasing proportion of the land planted in transgenic crops is in developing countries. In its executive summary, ISAAA notes that the growth in acreage between developed and developing countries was about the same—4.6 million and 4.4 million hectares, respectively.

Regionally, acreage in transgenic crops grew 11% in the industrial countries of the North and more than twice that, 28%, in the developing countries of the South.

Six countries, compared with four
(more ➡)

Paraquat Principle...

developing countries' economies.

Srinivasan released a new study, sponsored by thirty organizations from thirteen countries, called Paraquat: A Unique Contributor to Agriculture and Sustainable Development. Paraquat is the most widely used herbicide in the developing world and has come under increasing attack by environmental groups, who claim it is dangerously toxic to humans.

This fall, when a European Union scientific committee found paraquat safe for use in the EU, Goran Eklof of the Swedish Society for Nature Conservation countered: "In addition to health hazards, regulators are concerned that the chemical is persistent and accumulates in soil. Studies indicate that paraquat has adverse effects on mammals, birds, fish, and amphibians. In Sweden we believe that, for the environment and for health, the only safe use is no use."

Srinivasan found most such claims to be simply false. On claims of dangers of persistence in soil, for example, Srinivasan found that paraquat is, in essence, "environmentally benign." It binds to clay soils and doesn't affect soil life or leech into groundwater. It then degrades and "doesn't create any toxic effects in the breakdown," he said. Further, because it doesn't destroy roots, it prevents soil erosion, which is especially important in tropical regions, Srinivasan argued.

As to human health effects, paraquat droplets are such that inhalation poses little health threat, although it can in certain circumstances lead to bloody noses, Srinivasan found. It doesn't absorb through the skin and can be washed off, he noted, and Syngenta, the major maker of paraquat herbicides, has added a foul smell, dye, and an emetic to help prevent and protect against any accidental ingestion of the herbicide.

"The big problem is if there is

deliberate consumption for the purposes of suicide," Srinivasan found. Pesticides are a popular tool in suicides, he noted, and as one of the more common pesticides, paraquat is among those most used.

According to the Food and Agricultural Organization and World Health Organization, paraquat "may be absorbed through the gastrointestinal tract. Paraquat is not absorbed to any great extent by intact skin and there is no evidence of significant absorption from spray mist...Repeated daily six-hour exposure of rats to paraquat aerosols over a three-week period produced signs of lung irritation but no deaths...Fish — Not hazardous: rapidly absorbed by aquatic plants and inactivated in mud. Birds — Not highly toxic. No hazard under normal conditions of use...Protective clothing should be provided for those handling concentrates. Adequate washing facilities should be available close at hand. Eating, drinking, and smoking should be prohibited during handling and before washing after handling."

And paraquat, along with other pesticides, Srinivasan argued, serves a vital need. Even with pesticides, crop losses annually amount to about 33% to 42% of world production. Without them, though, crop losses would amount to 80%. And without the productivity enhancements such chemicals provide, the world would use more than double the 38% of arable land now used for agricultural purposes — an additional 14.1 billion acres, or 44% of the land available on Earth, Srinivasan said.

So why the pressure from environmental groups to ban pesticides in general and paraquat in particular? Why the attempt by EU environmental groups to intimidate the EU science commission approving the sale of paraquat in Europe?

To Srinivasan the answer is that

Transgenic Crops...

in 2002, had 99% of the global acreage in transgenic crops. These countries are the United States, 42.8 million hectares (63%); Argentina, 13.9 million hectares (21%); Canada, 4.4 million hectares (6%); Brazil, 3 million hectares (4%); China, 2.8 million hectares (4%); and South Africa, 400 thousand hectares (1%).

Brazil and the Philippines planted transgenic crops for the first time in 2003. Brazil planted soybeans and the Philippines, Bt corn. They join 16 other countries now planting transgenic crops.

Notably, of the 18 countries now growing transgenic crops 11 are developing countries.

By crop, transgenic soybeans were grown on 61% of the world's soybean acreage; transgenic corn was grown on 23% of global corn acreage; transgenic cotton was grown on 11% of global cotton acreage; and transgenic canola was grown on 5% of global canola acreage.

The global market value of transgenic crops in 2003 was estimated between \$4.5 and \$4.8 billion, up from \$4.0 billion in 2002. The market value is projected to grow to \$5.0 billion or more in 2005.



"certain extremist environmental groups...seem to be more concerned with power than the truth." That is no reason, though, "to deny access to cost-effective technology," he said.

His own counter-principle to the precautionary principle is simple: "To protect the farmers' rights, wherever they may be, to use whatever products and technologies they need."

Will the rights of farmers — and consumers and producers — blow away the precautionary principle in its many deadly manifestations? We'll have to wait and see.

—Source: *TechCentralStation.com*.