

Herbicide-tolerant plants are environmental hazard

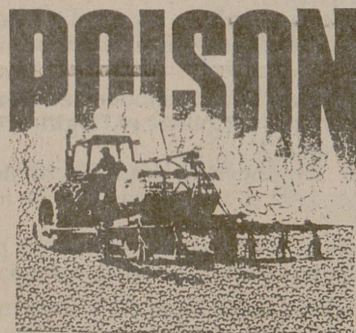
One of the early promises of biotechnology was to reverse agriculture's increasing dependency on chemicals and make sustainable agriculture possible. Biotechnology now promises to increase agriculture's dependence on toxic and carcinogenic pesticides, and further the decline of the family farm associated with the increasing industrialization of modern agriculture.

Despite agriculture's overdependence on pesticides and herbicides in particular, many biotechnology, agricultural, and seed companies, as well as the U.S. Department of Agriculture (USDA) and state agricultural institutions, are using genetic engineering (biotechnology) to develop crops and trees which are herbicide-tolerant (HT). Chemical companies now own most of the major seed companies in America. By controlling seeds and chemicals, two important chemical agriculture inputs, these companies could reap large financial rewards while furthering environmental and social disorder.

Annual atrazine sales could increase \$120 million if soybeans are made tolerant to atrazine herbicides. The atrazine-resistant soybeans could allow three times as much atrazine to be applied with no damage to the soybean crop.

Canola is one of at least 15 different crops, trees, flowers and grasses being engineered for glyphosate tolerance. The genetic engineering of glyphosate-tolerant canola alone could mean "hundreds of millions of dollars in additional sales" for Monsanto, according to one industry analyst.

The potential pot of gold is so big that American Cyanamid gave away for free a gene identified to give crops a tolerance to Cyanamid's new family of imidazoline herbicides. Pioneer Hi-Bred, the world's largest corn-breeding company, has agreed to insert the gene into its hybrids.



There are clouds on the horizon of the otherwise clear skies of this corporate bonanza. HT varieties of canola have lower yields and reduced fertility. Another problem is the price of expensive patented herbicides. The cost of a herbicide/herbicide-tolerant seed package may prove prohibitive for many farmers. Also, HT genes can be sexually transferred to weeds through cross-pollination, giving weeds the same HT properties as the crops.

There are a number of serious environmental and social problems associated with the development and widespread planting of HT crops.

Although herbicides are not immediately toxic to humans or animals, there is little research on their long-term toxicity. Chronic toxicity symptoms often do not appear until years after exposure. Studies done by the Environmental Protection Agency and others link various weed-killers with cancer, birth defects, central nervous system disorders, and skin diseases in humans.

Atrazine and metolachlor are the highest and fifth highest used herbicides in the United States. Both have been detected in groundwater and are classified by the EPA as possible hu-

Michael Worsham

Columnist

man carcinogens. The herbicide 2,4-D is the third most used in U.S. agriculture, and has been linked to cancer. All three of these herbicides are subjects of HT research.

The incidence and extent of pesticide contamination of food is unknown. Even worse, the USDA acknowledges that HT crops might carry more herbicide residues than current crops do.

Scientists generally cannot control where the foreign genetic material is inserted. HT genes could disrupt plant metabolism and gene function, creating genetically engineered plants which are possibly less nutritious or even unsafe to eat. The Food and Drug Administration has not yet announced plans to test genetically engineered foods for safety and nutritional value.

Twenty-one herbicides are among the 74 pesticides which the EPA has detected in the groundwater of 38 states. Many of these herbicides are the subject of HT research.

One study estimated that less than 1 percent of the pesticides (including herbicides) applied actually reach target pests. Since widespread HT crop farming will increase herbicide application, the severity of ground and surface water contamination will also increase.

Farmworkers will receive even higher levels of pesticides. HT corn could increase yields 2 to 4 percent and add to current surpluses. This would lower corn prices and reduce farmers' income. The decrease in farmer's income, coupled with the takeover of smaller farms by big agribusinesses, could lead to the social and economic decline of rural communities.

U.S. taxpayers unknowingly spent over \$10 million the last few years on HT plant research. The U.S. Forest Service spent \$3 million of this developing HT forest trees, indicating their continued intent to manage our national forest as timber farms.

The worst problem of HT plant research is the effect it will have on the development of alternative, or sustainable agriculture. The USDA has spent over \$13 million on low-input sustainable agriculture the last few years, about the same as on HT research.

The National Research Council found that alternative farming systems give farmers significant sustained economic and environmental benefits, and that wider adoption of proven systems would result in even greater economic benefits to farmers, and environmental gains for the nation.

Biotechnology has been used in more constructive ways. Genetic engineering has successfully produced a strain of cotton which makes its own pesticide which is poisonous to bollworms. However, HT crop research is an indefensible and completely irrational step backwards in the wrong direction towards increased toxic chemical dependency. Fortunately, Texas A&M University is not involved in HT research.

It must be pointed out to these modern-day Dr. Franksteins that water, air, soil, birds, animals, plants and people are not resistant to herbicides.

Herbicide-tolerant public relations personnel will have little trouble covering up that problem, but DuPont and its counterparts will undoubtedly not stop until they have created herbicide-tolerant newspaper columnists.

Michael Worsham is a graduate student in environmental engineering.



MAIL CALL

The Battalion is interested in hearing from its readers and welcomes all letters to the editor. Please include name, classification, address and phone number on all letters. The editor reserves the right to edit letters for style and length. Because of limited space, shorter letters have a better chance of appearing. There is, however, no guarantee letters will appear. Letters may be brought to 216 Reed McDonald or sent to Campus Mail Stop 1111.

Student shares racism experience

EDITOR:

In reference to Reggie Allen's article on racism on April 23rd, I would like to say that the same thing happened to me. In fact, events such as this have occurred at least two times in the last year. Both times, it was approximately the same time at night.

The policemen also shined lights in our faces when coming to question us. Each time they made my friends and me show not only our student I.D.'s, but our driver's licenses as well. They even went so far as to call our license numbers in to the College Station Police Department.

When we asked what we had done they also replied we "fit the description" of some criminal mischief.

Further, I have not only heard of, but been an example of Caucasian women quickening their pace when I happen to follow behind them at night.

By the way, my friends and I are WHITE. I am not a racist and agree that racism exists. However, when an unfortunate incident occurs, don't be so quick to label it "racism". In doing this, you only add unnecessary fuel to a fire that already has enough real problems.

Kevin Parma '91

Leave crop selection to farmers

EDITOR:

No one would disagree with Mr. Yung that starvation is a terrible problem that needs to be addressed immediately. However, reduced consumption of meat is not the answer. True, 56 percent of U.S. agriculture land is used for cattle. The reason for this is that this land is not suitable for row crops. Many areas are not capable of growing potatoes-only grass, and unless Mr. Yung knows how to feed babies grass, this still remains the most efficient way to use this resource.

Additionally, many grains are not nutritional enough to supply the needed protein to these starving people, and other animal sources of protein are needed.

In conclusion, I would like to say that even if all this surplus grain was present in the U.S., the political climate in most of these countries is such that getting the food to the people may be impossible. So why don't we leave crop selection to the farmers. After all, it's their livelihood and they know what works best.

Darrell Palm '93

Taiwanese want independence

EDITOR:

In the recent article of the editorial page in April 27, there are some opinions which upset us very much and could mislead many Aggies.

"Taiwan has been (and still is) a part of China since the beginning of mankind." said Dr. Edmond Chang.

This is an emotional argument! Taiwan has been governed by the Dutch, the Spanish, the mainland Chinese, the Japanese and the Nationalists. It was not always part of China, as was found in the written history and definitely not part of People's Republic of China now.

The Taiwanese now demand the reconstruction of the Congress which was elected, for the most part, 40 years ago during the civil war of China. The Taiwanese are looking forward to the bloodless revolution and a new, democratic and independent country.

Taiwanese Student Association

Aggieland spirit will live forever

EDITOR:

I have spent four wonderful years at A&M and plan to attend grad school in the fall. During these four years, I have lost count of the number of letters printed in the Battalion regarding the spirit of the student body. While some have been positive, most of the letters question the true meaning of being an Aggie.

Many times I have wanted to write and tell everyone that A&M is stronger than ever in that respect, but I have not had an experience to support my claim. Well, now I can prove it.

As ashamed as I am to admit it, I lost my Aggie ring April 24. I misplaced it in the library in the second floor bathroom. I returned ten minutes later, only to discover it gone. Anyone who has experienced this knows the emptiness associated with losing the most important gift this university has given us. I was lucky to recover my ring at the lost and found counter in the library, after several minutes of sweating profusely.

This letter is to try and convey my deepest expression of thanks to the individual who found and returned my ring. I know there are other people in this world who would have done the same thing, but only at A&M is it expected.

Even though "Howdy's are not as common as they used to be, and traditions are replaced to accommodate new generations and ideas, I believe that anyone would find it difficult to encounter another group of people who continue to support and care for each other long after their student life ends. Thanks to this one person, and others like him/her, I know that the deep-seeded spirit of Aggie-land will live forever. Gig 'em.

Patrick Dierschke '91

Overkill of gay, lesbian articles

EDITOR:

Do the editors at The Battalion understand the term "overkill?" Don't they think there has been a little bit of overkill used in the plethora of gay and lesbian articles printed since Gay and Lesbian Awareness Week?

There was a guy who tried to prove my point a couple of days ago, but the idiot also decided to print his warped opinions on the issues of gay rights. He did have a point about overkill, though.

Maybe there is a larger gay and lesbian population here than was once thought, and I do think the campus is now more aware of the gay community due to The Battalion's efforts, but this barrage of articles is unadorned over publication.

The editors can hide behind "the public's need to know" if they want to, but it's sensationalism, plain and simple.

It reminds me of a "Baptist" preacher standing in front of Sullivan Ross screaming at women things that need not be reprinted here. Maybe some of the people here at A&M aren't perfect (I know I'm not) or have done things that he considered "wrong," but I doubt his extravagance was warranted.

If I read the Bible correctly, Jesus didn't heal a blind man by poking out his eyes, nor the crippled man by kicking his legs.

Without using the Bible, the principle still applies. Correcting a misperception should be done objectively and calmly. It is said in Japanese business that the first side to yell is the side that lost. Well, The Battalion won't open anyone's mind by spray painting "HOMOSEXUALITY" on a baseball bat and smashing it over their readers' heads.

Kevin Lindstrom '93

The Battalion

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