

Elson Shields

Acting Spokesperson for the 24 public sector corn insect scientists who voted to upload the public statement onto the EPA SAP website.

Recent Past Chair of NCCC-046 “

Development, Optimization, and Delivery of Management Strategies for Corn Rootworm and other Below-ground Insect Pests of Maize.

The Issue:

Technology/stewardship agreements required for the purchase of genetically modified seed explicitly prohibit research.

Strictly focused on commercial seed products for sale to farmers.

Monsanto Technology/Stewardship Agreement:

Covers all seeds containing Monsanto Technology which include corn, soybeans, cotton, sugarbeets, canola, alfalfa.

“Growers may not plant and may not transfer to others for planting any seed for crop breeding, **research** or generation of herbicide registration data.”

Dow AgroSciences: Grower Agreement

“Grower may not:

**use seed or other plant material
containing HERCULEX®**

**Technologies, or provide such
seed plant material to any other
person or entity, **for research,**
breeding or seed production.”**

Pioneer Hi-Bred Seed and Technology Agreement

“You agree:

To not use this Seed or its progeny or provide it to anyone for crop breeding, seed production, **research**, or marker profiling (other than to make agronomic comparisons and conduct yield testing).”

Syngenta Agrisure™: Grower Agreement

“Not to use or allow others to use Seed, grain produced from Seed, the Syngenta Technologies or any plant material containing Syngenta Technologies for crop breeding, **research (including, without limitation, generating cooperative data against corn seed containing non-Syngenta technologies)**, generation of registration data or Seed production (unless Grower has entered into a valid, written production agreement with a licensed seed company);”

This statement prevents any public scientist from purchasing a bag of seed which is commercially available and conducting pest management research independent of the company's approval.

Industry Imposed Restrictions on Public Scientists

Refusing to allow proposed research

Outright denial

Endless legal wrangling until the window of opportunity closes or the legal costs to the public institution become excessive.

Industry Imposed Restrictions on Public Scientists

**Blocking publication of scientific articles
with negative information about
products.**

**Refusing to give permission to publish
experimental results**

**Threatening lawsuits if the experimental
results is published after permission
is refused.**

Types of Research Restricted

Levels of Plant Incorporated Toxins in the plant across the life of the plant.

Critical information needed for insect resistance development studies.

Off target risks of plant incorporated toxins to decomposers.

Types of Research Restricted

**All types of comparative research
between different products
(Monsanto vs Dow etc)**

**Critical information for the Farmers who
depend on the technology to produce the
nation's/world's food supply.**

Types of Research Restricted

Modes of action of the different toxins patented by different companies.

Are they truly different?

This has serious implications in resistance management strategies.

Types of Research Restricted

Off-Target impacts.

Impact on insects feeding on plants surrounding the GM field.

BT corn- Monarchs – J. Losey

Impact on beneficial insects (Biological control insects, pollinators etc)

Off target gene flow into surrounding ecosystems.

Breadth of the issue

All GM crops

(corn, soybeans, cotton, sugar beets, canola, alfalfa)

All Field oriented science

(Insects, weeds, diseases, potential off target effects)

Strategies by Scientists to Cope with the Restrictions

Not conducting the research viewed as critical to the long-term deployment of the technology.

Altering research protocol to win industry approval (less desirable experimental design).

Purchasing the seed and conducting the research in violation of the Technology agreement (knowingly or unknowingly).

We have difficulty understanding why these studies threaten patents and require the heavy handed approach by Industry.

Instead, we view this approach as a strategy to marginalize the public sector scientist, who in industry's views are an unpredictable risk to their profit margin.

We believe that the general public is the ultimate loser in Industry's quest to control the public sector scientist.

**Mandate of public scientist to evaluate
agricultural products available to the
American Farmer on the Open Market.**

**No interference with formulating scientific
questions**

No interference with experimental design

**No interference with conducting comparative
studies.**

No interference with reporting results

Public Scientists conducting independent research play the role of

- 1) Scientific information untainted by corporate priorities/interests**
- 2) Quality control of science**
- 3) Consumer-protection**

We respect the right of Companies to protect their Patents.

But

We fail to understand how this argument applies to the wide array of research commonly conducted by public scientists particularly in the areas of pest management.

“In frustration with Industry’s unwillingness to address the issues, the following statement was uploaded onto two EPA Scientific Panel websites focused on Plant Incorporated Protectants”

Statement:

The following statement has been submitted by 24 leading corn insect scientists working at public research institutions located in 17 corn producing states. . . .

Represents more than 60% of the public corn insect scientists and more than 90% of the major corn producing states (more than 1 million acres).

86 million acres of corn in the US in 2008. Corn is the largest acreage crop grown in the US (soybeans = 75 M acres, cotton = 8 M acres).

Statement:

The names of the scientists have been withheld from the public docket because virtually all of us require cooperation from industry at some level to conduct our research.

Blacklisting is a reality.

Many of us need access to industry controlled seed supply to conduct ongoing research and do our job.

'Statement:

Technology/stewardship agreements required for the purchase of genetically modified seed explicitly prohibit research.

These agreements inhibit public scientists from pursuing their mandated role on behalf of the public good unless the research is approved by industry.

'Statement:

As a result of restricted access, no truly independent research can be legally conducted on many critical questions regarding the technology, its performance, its management implications, IRM, and its interactions with insect biology.

'Statement:

Consequently, data flowing to an EPA Scientific Advisory Panel from the public sector is unduly limited.

All data flowing to EPA flows from either industry approved studies where results are “approved” by the company or from the company own “in house” studies.

'Statement:

Given the importance of the FIFRA SAP (Scientific Advisory Panel) process to an effective and credible assessment of new PIPs (Plant Incorporated Protectants) on behalf of the American public,

we urge EPA to require registrants to remove the prohibition on research on their products and specifically allow research by public-sector scientists.'

How did we get to this point as public scientists where industry dominates/controls our science?

Excellence in science requires an environment unfettered from artificially imposed restraints which restrict freedom of thought and the pursuit of information.

Impact of the Public Statement

NY Times article

National Academy of Science Briefing

Worldwide coverage of the issue (many articles at all levels)

Scientific American (most recent)

Nature Biotechnology (expected soon)

Impact of the Public Statement

Industry Response:

Research with Commercially Available Seed Products

The American Seed Trade Association is committed to public sector research, teaching and extension programs and recommends that member companies provide public sector researchers and public sector institutions the opportunity to conduct studies on commercially available, patent-protected seed products. Although every company must determine independently the terms under which it would provide such research opportunities, this statement describes the principles and objectives behind this commitment.

Limitations to ASTA Statement

Each company independently negotiates with each scientist, university and USDA-ARS.

One uncooperative company derails the whole process in a critical area of comparative research.

Two of the four companies have already indicated to scientists that they will not comply with the ASTA guidelines.

Problem easily solved?

Companies remove the “generalized research restriction” from the technology agreement.

Companies are not willing because they still want to control access to the technology by researchers and therefore control the research and message.

Problem easily solved?

EPA require access for the public scientist to the technology for research that does not infringe on their patents as a condition of licensing for sale.

May require a political process.

Problem easily solved?

Legal Challenge to the Technology Agreement as it pertains to public scientists.

NAS committee members (the attorneys) felt that the technology agreement would not hold up in court. (a precedent with software licensing)

Volunteers for a test case?

Industry realizes the public relations nightmare even if they won the case.

Future Direction

Invited article: Inaugural issue of “GM Crops”

Symposium at National and/or Regional professional meetings (expand topics to cover all affected commodities/disciplines)

Presentation Topic for the Farmer Groups at all levels (Local to National)