Approved: 2-13-97
Date

MINUTES OF THE SENATE COMMITTEE ON AGRICULTURE.

The meeting was called to order by Chairperson Steve Morris at 10:00 a.m. on February 12, 1997 in Room 423-S of the Capitol.

All members were present except: Senator Don Sallee (E)

Committee staff present: Raney Gilliland, Legislative Research Department
Jill Wolters, Revisor of Statutes
Nancy Kippes, Committee Secretary

Conferees appearing before the committee:
Chris Wilson, Director of Member Services of Kansas Seed Industry Association
Steve Ahring, agronomist, DeLange Seed
Maurice Miller, Drussel Seed
Bob Bunck, Bunck Seed
Dr. James Wilson, Trio Research, Inc.

Others attending: See attached list

The meeting was called to order by Chairperson Morris.

Senator Clark made a motion to approve the minutes of the February 11 meeting as submitted. Senator Umbarger seconded. The motion carried.

**SB 149: Concerning agriculture, creating the Kansas Agricultural Seed Commission**

Chris Wilson, Director of Member Services of Kansas Seed Industry Association, made some introductory remarks concerning the commission's projects and goals (Attachment 1) and introduced the following conferees.

Steve Ahring, agronomist with DeLange Seed, used overheads to point out the need for the Kansas Agricultural Seed Commission (Attachment 2). New technologies will have a profound impact on Kansas agriculture and accessing this technology may become difficult, however, the commission can help them meet the challenge to educate and inform as they have access to additional funds to do so.

Maurice Miller, Drussel Seed, testified in favor of **SB 149** naming some of the projects the new Kansas Seed Commission would include (Attachment 3).

Bob Bunck, Bunck Seed, testified in support of **SB 149**. He said seedsmen and farmers are looking for information and do not know where to find it and the commission could provide this assistance (Attachment 4).

Dr. James Wilson, Trio Research, Inc., provided testimony in opposition to **SB 149**, stating that the bill is not broad enough in that it gives an advantage to one particular group (Attachment 5). Dr. Wilson requested the hearing on **SB 149** be continued.

Hearing on **SB 149** was continued.

Meeting was adjourned at 11:00 a.m.

The next meeting is scheduled for February 13, 1997.

# SENATE AGRICULTURE COMMITTEE GUEST LIST

DATE: 2-12-97

| NAME | REPRESENTING |
|---|---|
| Tom R Tunnell | KS Grain & Feed Assn |
| Nancy Kelly | Leadership 2000 Class - Pratt, Ks |
| Mary Jane Stattelman | KS Dept of Agriculture |
| Diane Gruener | Ks Coop Council |
| Marty Vanier | KS Ag Alliance |
| Jeanette Jamison | Leadership 2000 Class - Pratt, Ks. |
| PETER J. SCHARTZ | USDA |
| Bill Fuller | Kansas Farm Bureau |
| Kerri Ebert | Kansas Dairy Association |
| Matthew Barker | Leadership 2000 + - Pratt, Ks |
| Daryl Strout | Ks Crop Improvement Assn. |
| James Alverson, PhD | Trio Research Inc |
| Robert M Bank | Bunck Seed Farm / KSIA |
| Norman Miller | Kansas Seed Industry Assn |
| Fred Dash | KSIA / Seed House, Inc - Atwood |
| Chris Wilson | KSIA |
| Cindy Denton | Div of Budget |
| Mike Beam | Ks. Lvstk Assn. |
| | |

**STATEMENT OF THE**

**KANSAS SEED INDUSTRY ASSOCIATION**

**TO THE SENATE AGRICULTURE COMMITTEE**

**SENATOR STEVE MORRIS, CHAIR**

**REGARDING S.B. 149, ESTABLISHING THE KANSAS SEED COMMISSION**

**FEBRUARY 12, 1997**

Mr. Chairman and Members of the Committee, I am Chris Wilson, Director of Member Services of Kansas Seed Industry Association (KSIA). KSIA is the professional organization of seedsmen in Kansas, including wholesale, retail, farmer-dealer, seed company representative, and associate industry members. We thank you for introducing S.B. 149, holding this hearing today, and giving us the opportunity to testify in support of the bill.

KSIA has been discussing the idea of establishing a Kansas Seed Commission for over two years. It is with a great deal of thought and communication with seedsmen and other organizations that KSIA brings this bill to the Legislature for your consideration. S.B. 149 is patterned very closely after the KS Sheep Council and KS Dairy Commission legislation passed by the Legislature passed in 1992 and 1995. Much of the language is indentical to those laws and other commission laws, with changes to respond to concerns of seedsmen and other organizations.

We have worked hard to make this a consensus piece of legislation. We have responded to concerns that another commission not be funded by fees on producers. Therefore, this commission would not set a per unit checkoff, but a low fee on the sellers of seed, so that it becomes a small cost of doing business, rather than a passed-on cost to growers. We have responded to concerns that it not be a burden on those who sell small amounts of seed by providing an exemption for those who sell less than $3000 annually of agricultural seeds. We have responded to concerns that it not be repetitive of existing commission efforts. The projects seedsmen are interested in funding through this commission are very seed-specific ones which would not have appeal for the commodity-specific commissions.

The establishment of the Kansas Seed Commission would allow this industry to better

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Attachment 1
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respond to the dynamic changes which are occurring within the industry. It would assist the Kansas seed industry in transitioning to the new technologies in agriculture. It would provide a structure to allow the seed industry to partner with state and federal agencies and seed commissions in other states on projects and to apply for grant funding. The Commission will allow the industry to match KTEC funds or sponsor projects with the Kansas Department of Agriculture Inspections Division and Agricultural Statistics Division or assist with research projects at Kansas State University.

The Commission, however, is expected to generate only about $25-30,000 annually, making it by far one of the smallest commissions. It's certainly not enough money to fund major research projects. It is enough, though, to participate in some of the kinds of projects envisioned with the agencies above. It is enough to sponsor educational projects for Kansas seedsmen. And the structure would allow additional funds to be derived from grant sources.

With me today are representatives of the Kansas Seed Industry Association. KSIA's Immediate Past President Steve Ahring of DeLange Seed, Girard, will share with you some of the changes occurring in the industry which prompt the industry to seek new ways to help itself. Another past president, Maurice Miller of Drussel Seed & Supply, Garden City, will tell you about some of kinds of the projects which are envisioned for the Commission.

Thank you for your consideration of S.B. 149. We respectfully request that you report it favorably for passage. We will be glad to respond to any questions you may have.

####

# KANSAS AGRICULTURAL SEED COMMISSON

**SENATE BILL #149**

Good morning, I'm Steve Ahring, agronomist with DeLange Seed and immediate Past President of the Kansas Seed Industry Association.

I would like to share with you some of the changes and challenges facing the seed industry here in Kansas. It is an exciting time to be involved in our industry, it is also a frightening time. There have been and continue to be, a record number of mergers, buyouts, consolidations, and alliances formed within the seed industry. Most of this activity can be traced directly to the anticipation of genetically modified crops which will be utilized in a startling array of end-uses. This "BioTech" is not the only new technology which will have an impact upon the seed industry but it is perhaps the most important, as seed will be the carrier of this technology.

## "NEW TECHNOLOGIES"

This morning I'd like to briefly outline some of the new technologies that are likely to have a profound impact on Kansas Agriculture. And to speculate just a bit about how these technologies will effect the Kansas seedsman and the Kansas farmer.

We will begin with "BioTech".

## "THE QUESTION"

The human genome is being mapped. Scientists expect to know the position of every gene on all 23 chromosomes by the year 2005. Likewise, the genes of all the major crops are being identified. Once this work is complete, the task of defining the function of each and every gene will be undertaken. The ramifications of this work is fantastic. The cause and effect of diseases will be known and strategies devised to effect cures. It may irradicate many of our most serious genetic disorders. In the case of crop production, scientists will be able to manipulate and alter individual gene sequences to accomplish plant improvement.

## "NANO-ASSEMBLERS"

We now have Scanning Tunneling Microscopes capable of manipulating single atoms in the laboratory. Are we so far removed from being able to rearrange molecules of Carbon, Oxygen, and Nitrogen into a new or different product? As this slide depicts, could we take cheap ingredients such as grass and water and convert it into a beef product. Don't laugh, this is not far removed from what a cow does now. What would technology like this do to our livestock industry?

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## "MONKEY DNA"

Human DNA differs from a chimp's by just 1%. For most of us that 1% makes a lot of difference, both in appearance and intelligence. The point I want to make is that very small differences in genetic make-up can result in very large differences in an organism.

## "EXPLOSION"

There have been over 1000 patents applied for in the last 18 months involving genetically modified crop seeds. Over 1/2 of them have been requested by Monsanto. There will be a tremendous quantity of genetically modified germplasm released over the next 5 or 6 years. It will be a real challenge to keep up with what is available. You remember back 10 to 15 years ago when computer technology exploded. By the time you got home with your new system it was obsolete. There was already something newer, faster and better on the market. I suspect that this will be the case with this new technology as well.

## "MODIFIED CROPS"

Almost all of the patent requests have involved technology directed at these 4 crops. I am including tomatoes in with the vegetables, even though my wife keeps telling me they are not really vegetables.

Of course, corn is king, we would expect to see it on the list. Some of the modifications involving corn will provide disease and insect resistance and herbicide tolerance. However, most of the work is focused on improved food quality, industrial uses, and other end-use applications. There is even talk about growing modified corn to produce plastics.

Soybeans are unique in that they have multiple applications in the food, oil and pharmaceutical industries. Dupont and others are attempting to utilize modified soybeans to produce pharmaceuticals. They are actually growing the crop to harvest things like antibodies.

Monsanto is very proud of the fact that they can grow cotton with different colored fibers. One day blue jeans will not have to be dyed blue, the cotton in the field will be blue.

The really interesting thing about this list is not what's on it, but rather what's not. Kansas perennially leads the nation in the production of wheat and sorghum. Yet, little work at this time is being pursued in these crops.

Since wheat and sorghum are not part of the big picture as of yet, Kansas seedsmen and perhaps Kansas farmers are in a situation where accessing this technology may become difficult. The corporate executives of the large companies now in control of most of the technology involved in

gene modification do not consider Kansas to be a corn or soybean producing state. I have been told on numerous occasions that Kansas is a "fringe area". Originally, only one Kansas seed company was awarded a contract to produce Round-up Ready soybeans. Monsanto was and is satisfied that the large companies such as Pioneer and Asgrow etc. can market these materials in Kansas. Where is the competition in this arrangement? Who is going to keep these big corporations honest? Ask yourself what is the difference between a small family owned seed company competing against major corporations and a small family farm competing against a corporate farm?

You know, small companies are not without resources. In fact, we have an advantage in some respects. For example, we care about our customers. Without our customers continued success our businesses would fail. Sure the sales rep for the big company that calls on Kansas farmers cares, his paycheck depends upon it. But the corporate Big Shots, the ones making the decisions don't care, **Kansas is a fringe area.**

Secondly, the small Kansas company produces locally, conditions seed locally, distributes locally and markets locally. We are a whole lot more efficient than the large national and international seed companies. The result is, we can sell our products at a more economical price.

Lastly, I would point out that we are able to tailor our product line to our specific marketing area. We don't care how our products work in Illinois or Iowa. We want specific adaptation to our trade area. Our customers can benefit substantially from this dedication.

**"MONSANTO"**

I have referred to Monsanto on several occasions, this overhead demonstrates why. Monsanto is no longer a chemical company. In fact, they are spinning off their chemical business to finance their acquisitions of seed companies and bio-tech firms. A complete picture of Monsanto's recent transactions would occupy an area larger than this screen. But, these are the transactions of most concern to our Industry.

With their recent purchase of AgriPro, Monsanto has pretty well achieved complete control of hybrid wheat. They own the chemical hybridization agent and the only two breeding programs actively marketing hybrid wheat. Ask yourself - when genetically modified wheat becomes available, how will it be marketed? Hybrid production requires the purchase of seed every year thus insuring that the farmer will pay for this technology with every purchase.

With the purchase of Asgrow Seed Company, Monsanto now has if not the finest, then certainly one of the finest soybean breeding programs in the world. They also purchased a substantial marketshare of the soybean seed sold in the United States.

**STATEMENT OF MAURICE MILLER TO THE SENATE AGRICULTURE COMMITTEE REGARDING S.B. 149, THE KANSAS SEED COMMISSION**

The Kansas Seed Industry Association (KSIA) is proposing legislation to establish the Kansas Seed Commission, similar to other commodity commissions in make-up and authority, but focused on projects involving seedsmen.

The Commission's projects and goals would be to educate, inform and fund research projects which would enhance the Kansas Seed Industry and through them also then enhance the Kansas producer. It is expected that such projects would not be duplicative of other research efforts or include variety research.

Proposed projects include:

A survey of the economic impact of the seed industry on the state, which could be used for informing legislators, other policymakers and consumers. An economic impact study such as this, if properly done, could provide information useful to farmers to show them the economic benefits to them by planting high quality seed versus bin run grain that may be infested with noxious weeds, diseases, or insects.

Research for using seed screenings for fuel, as opposed to going to landfills, adding value to the product, as well as reducing waste. K-TEC has informed us that they would provide us with funds for this and other projects if we had matching funds available, which at the present time, we do not.

Establishment of a world wide web resource center for Kansas seedsmen and producers to utilize, providing technical and regulatory information they need but do not now have ready access to.

Public service announcements for media use to further inform the public about seed quality, availability and value.

A series of educational seminars on topics such as safety, new seed technology, identity preserved information, marketing short courses, accessing international markets...

Support for other educational and informational projects to keep seedsmen updated on technologies and other changes which they need to know and to pass on to customers.

Any public or private entity could submit a project to the Commission, requesting research funds.

And with the purchase of Holdens for 1.02 billion dollars, Monsanto has effectively challenged Pioneer for supremacy in seed corn. Holden Seed Company is a foundation seed company. In other words, they develop parent lines for corn hybrids and in turn license these lines to other seed companies for the production of hybrids. Holden parent lines account for approximately 35% of all the hybrid corn seed marketed in the United States.

Monsanto has very quickly established and entrenched themselves into a position of dominance in a broad segment of the seed industry. Please do not take me wrong, in no way am I being critical of Monsanto. However, their relative lack of experience in the seed trade coupled with the huge position they have acquired, does indeed make many in the seed trade nervous.

* Biotech is not the only new technology that affects agriculture.

**"GPS"**

Global Positioning Systems or site specific farming is a technology that will allow farmers to become very knowledgeable about their production fields. It is technology similar to what was utilized in the Gulf War to direct U.S. missles with pinpoint accuracy. It involves a satellite in earth's orbit, a receiver on the ground, radar or some other tracking system, yield monitors on the combine, and extensive soil sampling of production fields. The idea is that farmers will be able to identify areas in the field that are low in fertility or that suffer from a pH imbalance or due to soil conditions, are just simply unproductive. With this knowledge they will be able to adjust plant populations, and apply a different amount of fertilizer or herbicide on these specific sites. Many of us in the seed trade anticipate multiple varieties or even multiple crops being utilized in a single field to help compensate for field differences. This technology could well provide high efficiency and substantial savings on fertilizer and pesticides, while maximizing the fields production potential.

However, it does carry a substantial price tag. The minimum equipment you need to get started is a yield monitor and satellite receiver. Cost of these items will range from $7,000 to $10,000, and that's just the beginning. When you start talking about variable rate applicators, you are talking serious money.

Who will benefit from this technology? Will those large farm operations that can afford the investment in the necessary equipment gain another competitive advantage? Who will interpret the data and make the recommendations? How can the Kansas Seed Industry participate in the implementation of this technology and the utilization of the information obtained from this technology?

## "INTERNET"

The next generation of Kansas farmers will likely make all purchasing and all marketing decisions through the computer. I don't have to tell you that often how you buy is more critical to your success than how you sell. Access to the internet will provide invaluable product information in a matter of moments. A farmer will be at a severe competitive disadvantage if he fails to take advantage of this technology. Likewise, we as an industry must learn to take advantage of the Internet to educate and help prepare our customers for the not too distant future. We can use this vast information network to keep our customers and each other informed and prepared to adapt to rapid changes brought about by new technology.

## CONCLUSION

This is a critical time for the Seed Industry. It is a time of great change and possibly of great opportunity. We foresee a future wherein our customers, the Kansas farmer, may no longer simply produce commodity grains, but rather grow modified crop seeds, under contract, for a specific end-use purpose. We anticipate our Industry being called upon to help our customers interpret satellite photography and make recommendations for site-specific agriculture. We anticipate a greater demand for information from our customers. This demand can only be met by enhancing our computer skills and utilizing the internet.

The companies and individuals that make up the seed industry here in Kansas, will be hard pressed to accomplish the transition to twenty-first century technology on their own. However, collectively, through a Commission we believe our Industry can meet the challenge. A Commission could educate and inform Kansas seed dealers through newsletters and seminars. A Commission could provide direction and guidance through a difficult and confusing time for our Industry. A Commission could apply funds to specific projects that would benefit all Kansas seedsmen and Kansas farmers.

We are not asking for much, just the opportunity to help ourselves.

Thank you for your attention and courtesy.

**STATEMENT OF MAURICE MILLER TO THE SENATE AGRICULTURE COMMITTEE REGARDING S.B. 149, THE KANSAS SEED COMMISSION**

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Proposed projects include:

A survey of the economic impact of the seed industry on the state, which could be used for informing legislators, other policymakers and consumers. An economic impact study such as this, if properly done, could provide information useful to farmers to show them the economic benefits to them by planting high quality seed versus bin run grain that may be infested with noxious weeds, diseases, or insects.

Research for using seed screenings for fuel, as opposed to going to landfills, adding value to the product, as well as reducing waste. K-TEC has informed us that they would provide us with funds for this and other projects if we had matching funds available, which at the present time, we do not.

Establishment of a world wide web resource center for Kansas seedsmen and producers to utilize, providing technical and regulatory information they need but do not now have ready access to.

Public service announcements for media use to further inform the public about seed quality, availability and value.

A series of educational seminars on topics such as safety, new seed technology, identity preserved information, marketing short courses, accessing international markets...

Support for other educational and informational projects to keep seedsmen updated on technologies and other changes which they need to know and to pass on to customers.

Any public or private entity could submit a project to the Commission, requesting research funds.

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**STATEMENT OF BOB BUNCK, VICE PRESIDENT, KANSAS SEED INDUSTRY ASSOCIATION, CONCERNING S.B. 149**

Mr. Chairman and members of the committee, I am Bob Bunck, partner in a family seed production business at Everest, Kansas, and vice president of the Kansas Seed Industry Association. Thank you for this opportunity to speak on behalf of S.B. 149, creating the Kansas Seed Commission.

This legislation is important to our industry to give us needed tools for research and education in the seed industry. Kansas seedsmen would appreciate your favorable consideration.

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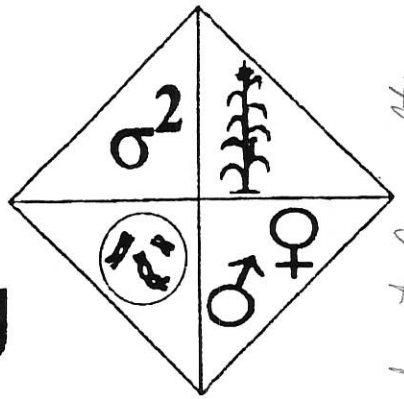
Attachment 4
February 12, 1997

Special Report 98
1996

# National Plant Breeding Study- I




Human and Financial Resources Devoted to Plant Breeding Research and Development in the United States in 1994



IOWA STATE UNIVERSITY
Iowa Agriculture and Home Economics Experiment Station

Cooperative State Research, Education & Extension Service / USDA cooperating

ISN: 0361-199X

(17)

Table 12. Crops in which 25 or more breeding SYs are employed in the United States

| Crop | Number of SYs | | | |
|---|---|---|---|---|
| | SAES | ARS/ USDA | Private industry | Total |
| Alfalfa | 15 | 12 | 41 | 68 |
| Barley | 16 | 2 | 14 | 32 |
| Canola | 6 | 1 | 28 | 35 |
| Cotton | 19 | 12 | 103 | 134 |
| Field corn | 27 | 8 | 510 | 545 |
| Onion | 4 | 1 | 21 | 26 |
| Pepper | 5 | 1 | 38 | 44 |
| Potato | 31 | 10 | 9 | 50 |
| Rice | 14 | 6 | 22 | 42 |
| Sorghum | 12 | 3 | 41 | 56 |
| Soybean | 45 | 10 | 101 | 156 |
| Sugar beet | 1 | 11 | 24 | 36 |
| Sunflower | 1 | 3 | 31 | 35 |
| Sweet corn | 5 | 1 | 27 | 33 |
| Tomato | 21 | 4 | 60 | 85 |
| Wheat | 65 | 12 | 54 | 131 |

Crops for which private industry employs 20 or more plant breeding SYs are presented in Table 13. There are 510 SYs doing corn breeding for 91 companies in the United States. Private industry also has more than 100 plant breeding SYs for each of cotton and soybean. Overall, private industry employs 20 or more breeding SYs on 16 different crops. The number of SYs devoted to breeding these 16 crops by private industry is 1,142. In the previous section, it was noted that private sector has breeding R&D on 144 species, but 76% of the private sector SYs in plant breeding is devoted to the 16 crops listed in Table 13.

SY = Scientist Person Years on full time scientists at work

Alfalfa shows 68 people,



Table 13. Crops for which 20 or more breeding SYs are employed in private industry in the United States

| Crop | Cultivar type | Number of SYs | Number of companies |
|---|---|---|---|
| Field corn | H | 510 | 91 |
| Cotton | PL | 103 | 35 |
| Soybean | PL | 101 | 38 |
| Tomato | ½ H / ½ PL | 60 | 24 |
| Wheat | PL | 54 | 27 |
| Alfalfa | S | 41 | 12 |
| Sorghum | H | 41 | 19 |
| Pepper | ½ H / ½ PL | 38 | 27 |
| Sunflower | H | 31 | 14 |
| Canola | PL | 28 | 4 |
| Sweet corn | H | 27 | 12 |
| Sugar beet | H | 24 | 7 |
| Rice | PL | 22 | 8 |
| Onion | ½ H / ½ PL | 21 | 13 |
| Muskmelon | H | 21 | 15 |
| Lettuce | PL | 20 | 18 |

H = hybrid; PL = pure line; S = synthetic.

It is commonly acknowledged that private company plant breeding began with the breeding of hybrid corn, primarily because seed of hybrid cultivars must be repurchased each year. Also, a private company can maintain its monopoly on a hybrid by not releasing the parent stocks used to make the hybrid. Of the 16 crops listed in Table 13, hybrids are sown on the entire commercial acreage of field corn, sorghum, sunflower, sweet corn, sugar beet, and muskmelon, which collectively account for 654 private industry SYs. Currently, the commercial acreage of tomato, pepper, and onion is about evenly divided between hybrid and pure line cultivars. These crops account for 119 breeding SYs in private industry. The commercial acreages of cotton, soybean, wheat, canola, rice, and lettuce are sown entirely to pure line cultivars, and these crops account for 328 SYs in private plant breeding. Seed of cultivars of these crops can be replanted by a farmer year after year without genetic deterioration, so to insure repeated sales of these crops, private companies must protect their cultivars via Plant Variety Protection or patents. The ratio of private industry SYs devoted to hybrid cultivar development shows that hybrid breeding is a significant factor in the success of plant breeding by private companies.

All private wheat companies are working on HYB individually,

The crops with 15 or more plant breeding SYs in public sector employment are given in Table 14. Wheat, soybean, and potato have 40 or more breeding SYs in the public sector; the remaining 8 crops have from 15 to 35 SYs each. Pureline is the cultivar type for 7 of the 11 crops with a total of 233 SYs. Few of the 35 public sector SYs on field corn develop hybrids; in fact, 32 SYs are devoted to PBR and GE activities for corn. The case of potato is unique in that clonal cultivars are used to plant commercial acreages

and private contracts which

of this crop. Of the 50 breeding SYs for potato, 41 are employed in the public sector, ar[illegible]of these 41 SYs are devoted to CD. Obviously, the public sector has nearly d[illegible]itself from breeding hybrid cultivars of crops; on the other hand, plant breeding in [illegible]e industry is heavily devoted to hybrid CD.

Table 14. Crops in which 15 or more breeding SYs are employed in SAES and ARS/USDA.

| Crop | Cultivar type | Number of SYs in SAES | Number of SYs in ARS/USDA | Total | No. of projects |
|---|---|---|---|---|---|
| Wheat | PL | 65 | 12 | 77 | 42 |
| Soybean | PL | 45 | 10 | 55 | 32 |
| Potato | C | 31 | 10 | 41 | 28 |
| Field corn | H | 27 | 8 | 35 | 32 |
| C[illegible]on | PL | 19 | 12 | 31 | 20 |
| A[illegible]lfa | S | 15 | 12 | 27 | 25 |
| Tomato | ½ H / ½ PL | 21 | 4 | 25 | 28 |
| Rice | PL | 14 | 6 | 20 | 15 |
| Barley | PL | 16 | 2 | 18 | 24 |
| Peanut | PL | 14 | 3 | 17 | 11 |
| Bean | PL | 13 | 2 | 15 | 14 |

H = hybrid; PL = pure line; S = synthetic; C = clone.

**Annual Dollar Input Into Plant Breeding**

The cost per plant breeding SY in the private sector varied according to company size (Table 15). The cost per SY was $290,000 for companies with 25 or more SYs and was $148,000 per SY for companies with 2.9 or less. There was a somewhat linear regression for the other classes. Overall, the 329 companies that do plant breeding have an annual expenditure of about $338 million for R&D. Kalton et al. (1989) estimated that the private sector was spending $272 million on plant breeding R&D in 1989. Their estimates were obtained by asking the companies surveyed how much they spent on R[illegible]

The public sector is estimated to spend $213 million annually on plant breeding R&D (Table 16). Nearly three-quarters of this amount is expended by SAES. The total research expenditure for SAES and cooperators in 1994 was $2,132 million, and the expenditure for crops research was $720 million. Therefore, SAES estimated expenditure for planting breeding R&D represents 7.3% of the total SAES budget and 21.5% of the crops budget. Comparable data for ARS/USDA are $1,144 million for all research and $418 million for crops research. The ARS/USDA expenditure of $53.1 million for plant breeding is 4.6% of total research expenditure and 12.7% of the crops research expenditure. The total estimated expenditure for plant breeding annually in the United States is $551 million with 61% from the private sector and 39% from the public sector.



Table 15. Cost per SY, number of companies, total SYs, and dollar input into plant breeding R&D by private industry arranged according to company SY size.

| Company class in SYs | No. of companies | Cost per SY | Total no. of SYs in class | Dollar input for class |
|---|---|---|---|---|
| 25.0 - up | 10 | $290,000 | 466.2 | $135,198,000 |
| 15.0 - 24.9 | 5 | $228,000 | 90.6 | $ 20,657,000 |
| 10.0 - 14.9 | 20 | $240,500 | 235.75 | $ 56,697,875 |
| 5.0 - 9.9 | 43 | $186,000 | 286.7 | $ 53,326,200 |
| 3.0 - 4.9 | 43 | $217,000 | 153.1 | $ 33,222,700 |
| 0 - 2.9 * | 208 | $148,000 | 265.95 | $ 39,360,600 |
| Totals | 329 | | 1,498.30 | $338,462,375[4] |

[4] If the estimated 36 SYs for companies that did not reply (see Methods and Materials) were included, $7.8 million would be added to the private sector expenditure.

Table 16. Cost per SY, total SYs, and dollar input into plant breeding R&D by the public sector arranged according to source of public sector employment.

| Employment source | Cost per SY | Total number of SYs | Dollar input for source |
|---|---|---|---|
| ARS/USDA | $300,000 | 177.0 | $ 53,100,000 |
| Plant Materials Center | $125,000 | 36.2 | $ 4,525,000 |
| SAES | $293,500 | 529.9 | $155,525,650 |
| Totals | | 743.10 | $213,150,650 |

* Small enfrasswally-driven companies are the most cost-effective,

SAES = State Experiment Station or University programs

(5)

High Plains Journal
THE FARMER-RANCHER PAPER

# Farmers defy Canadian Wheat Board monopoly

**The Associated Press**
*By David Crary*



EDMONTON, Alberta (AP)Lawyers and lobbyists have replaced the gunslingers. But a battle raging among farmers across the Canadian prairies rivals any range war of the cowboy era for passion and bitterness.

At stake is the Canadian Wheat Board, a 61-year-old federal agency with a monopoly over the export and sale of the Prairie Provinces' multibillion-dollar grain production.

To many farmers, the board is a national treasure, cushioning them from the uncertainties of the market, assuring them reliable income even in bad times.

To its foes, the board is power-hungry and dictatorial, preventing farmers from seeking the best prices on U.S. grain markets. One farmer endured jail for five months and dozens more have incurred hefty fines for waging a civil-disobedience campaign defying the board's ban on unlicensed cross-border sales.

Supporters of the board say the perception among many farmers that they could get better prices selling grain on the open market in the United States may be true for the moment, but they accuse the rebels of short-sightedness.

Wilf Harder, a Morris, Manitoba, farmer who serves on a wheat board advisory committee, said opponents of the board are the children of the farmers who began an orderly, profitable system.

``They are the ones who now are sort of living off the inheritance of their fathers who supported the wheat board. Now, they are trying to reinvent the wheel,'' Harder said.

Agriculture Minister Ralph Goodale is proposing some modest reforms to give farmers more input into board policies. But he says abolition of the board would play into the hands of U.S. interests that want to curb Canada's 21% share of the world export market.

David Orchard, a Saskatchewan farmer who has written a book about Canada's fight against U.S. expansionism, says the wheat board's role is crucial in preventing American corporations from taking over the Canadian grain industry.

``The U.S. is not the Friendly Giant,'' Orchard wrote, in a commentary for the Toronto-based newspaper The Globe and Mail. ``It is Canada's competitor, and by far its most dangerous one. Those who would destroy the wheat board are playing with fire.''

The rhetoric on the other side is just as heated, particularly from Farmers for Justice, a militant coalition

of about 600 or 700 growers who have organized the civil-disobedience campaign.

Their No. 1 martyr was Andy McMechan, a 46-year-old Manitoba farmer, jailed in July for refusing to comply with a bail condition that he surrender to customs officials a tractor he used to haul grain over the U.S. border. While in custody, he was sentenced to four more months in jail for illegally exporting grain. He was released Dec. 10, after agreeing to hand over the tractor.

Farmers for Justice went so far as to ask Amnesty International to declare McMechan a political prisoner. The human rights group declined.

``He has endured treatment we would expect to read about in totalitarian regimesnot in peaceful, tranquil rural Manitoba," the group said.

While Farmers for Justice has dominated the headlines with its defiant cross-border convoys, other foes of the wheat boardnotably Alberta's provincial governmentmay have greater success in the long run with court challenges of the board's monopoly.

Alberta's stance reflects the views of its farmers. More than 60% of farmers who voted in a 1995 plebiscite rejected the wheat board monopoly and said they should have a choice on how their grain is marketed.

To the federal government's dismay, Alberta began running radio ads trumpeting its position that farmers deserve the option of selling wheat on their own.

``As a grain producer, you have asked for the right to openly market your product like any other business," Alberta's Agriculture Minister Walter Pazskowski said, in one of the ads.

``You want freedom of choice to make the best deal you canwhich could include the wheat board. We support you on this. It is your grain. It should be your choice."

Alberta is involved in two legal challenges of the wheat board. In one, before the Alberta Court of Appeal, the province seeks a ruling on whether it has the right to export grain on its own without a license from the board.

The other case, before a federal court, alleges that the wheat board's procedures are unfair.

``In our view, the way the wheat board conducts its business is unconscionable," Gordon Herrington, an Alberta Agriculture Department official, said, in an interview. ``All the risks are carried by the farmer."

# MCIA's New, Independent Seed Company:

## The Philosophy Behind the Launch

**Certified seed has fallen by 100,000 acres**

**This opportunity brings them new genetics as well as income.**

By Natalie S. Knudsen
S&C Field Editor

The Minnesota Crop Improvement Association is currently in the process of developing an entrepreneurial solution to the declines in public variety seed business: sponsoring a launch of a for-profit seed company, NorthStar Genetics, Ltd. Gary Beil, president/CEO of MCIA, talks about reasons for the launch, changes in the public seed business and why he thinks the new company is an important opportunity for MCIA members.

**S&C: What factors are driving the decision to create a separate genetics company?**

Beil: Several factors are changing the public variety seed business whether we like it or not. Certified seed does not have the sales potential it used to enjoy, which means reduced acres and members for our organization. Certified seed acres have fallen by 100,000 acres since 1989 in Minnesota and we have lost approximately 350 active members over the same time period, translating into a nearly 40 percent loss in business.

A big factor is the lack of new public varieties from land grant universities that can compete with privately developed genetics. Not only are fewer varieties being developed but universities are being forced to sell many of the varieties they develop to private bidders through exclusive releases. University research budgets are being cut continually due to the public's perception of agriculture. And the universities see these sales as a way to fund the hands-on experience necessary to fulfill their number one mission: the training of students.

Add these factors, plus private wars on public varieties and brown bagging, and it's easy to see that business for MCIA, as well as many other crop improvement associations, is in a challenging period.

**S&C: Do you feel this new company will be in direct competition with current MCIA members?**

Beil: No. I think it's clear that the reduction in demand for public seed as we know it will happen with or without NorthStar Genetics. Individuals must be shareholders in NorthStar Genetics to participate in seed sales. This opportunity brings them new genetics as well as income.

MCIA is also working to expand its Quality Assurance program with private companies. MCIA will now source certify trees, grasses and forbs and we're working to expand our laboratory services.

Frankly, we're looking for ways to fulfill our mission statement: "MCIA is an organization dedicated to improving productivity, profitability and the competitive position of MCIA members by providing services to producers, conditioners and distributors of plant products enabling them to provide high quality plant products to Minnesota, the US and the World."

**S&C: How do you see members benefitting from this move into private genetics sales?**

Beil: First, I think it provides an opportunity to stay in the seed business. Members can expect to profit in four areas: 1. good returns on their initial stock purchase invest-