

# Wheat industry organisations support biotech wheat

By Ross Korves

**W**heat industry groups in the US, Canada and Australia recently agreed to 'work toward the goal of synchronised commercialisation of biotech traits in the wheat crop'.

This comes five years after Monsanto abandoned its early efforts to develop herbicide resistant wheat due to the lack of



**Wheat is a vital food and biotechnology can provide for higher yields and improved nutritional content.**

acceptance by wheat producers in the US who feared loss of major export markets. The industry groups recognise 'it was in the best interest of all three producer communities to introduce biotechnology in a coordinated fashion to minimise market disruption'.

This decision was not a snap judgment. Industry estimates indicate it takes 10 years and a US\$100 million to develop a biotech crop trait and receive regulatory approval. In late 2008 the National Association of Wheat Growers (NAWG) in the US adopted seven principles for commercialisation of biotech wheat:

- The technology provider should develop a dialogue with NAWG before seeking regulatory approval;
- Regulatory approval for food and feed use in all major wheat exporting countries;
- Not impair the ability of non-biotech

wheat to meet commercial standards for the presence of biotech traits;

- A trait detection test developed by the technology provider;
- The technology provider should have the primary responsibility for education and outreach;
- The technology provider should demonstrate stewardship of the technology; and,
- The certified seed model used in the US is the preferred approach for delivery of the technology.

## TRI-NATION WHEAT SUPPORT

In the joint announcement the US, Canadian and Australian industry groups stressed that:

- Wheat is a vital food and biotechnology can provide for higher yields per hectare and improved nutritional content;

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## <5...SUPPORT FOR BIOTECH WHEAT

- Where biotech varieties of other crops are available growers of wheat are shifting to the other crops because of higher incomes;
- Biotechnology is a proven technology with over 10 years of use and a record of safety and environmental benefits; and,
- Wheat's lacks of public and private re-

search has left it behind compared to other crops.

In 2008–09 wheat was still the largest crop in the world in area harvested at 224 million hectares which represented 26.8 per cent of the 10 major crops. But the area harvested in this decade has grown less than half the amount for corn and one-third the amount for oilseeds.

Since US farmers were given flexibility

under the 1996 farm bill to decide what crops to plant, US wheat acreage harvested for grain declined from 25.4 million hectares in 1996–97 to 18.9 million hectares in 2006–07 before recovering to 22.5 million hectares in 2008–09 and declining to a projected 19.8 million hectares in 2009–10.

North Dakota, the second largest wheat state in area harvested behind Kansas – where mostly hard spring wheat and durum wheat are grown – is often used as an example of the shift from wheat and to biotech crops like corn and soybeans.

Wheat area harvested in North Dakota declined from 5 million hectares in 1996–97 to 3.5 million hectares by 2008–09, while corn area increased from 242,000 to 931,000 hectares and soybeans from 324,000 to 1.5 million hectares.

Over that same time period Canadian wheat area declined from 12.2 million to 10 million hectares.

Australia is the exception as wheat area harvested increased from 10.9 million hectares in 1996–97 to 13.5 million hectares in 2008–09.

Russia, Ukraine and Kazakhstan have been filling some of the world shortfall in area harvested.

### **Drought tolerance**

Wheat producers are interested in the potential for drought tolerant wheat now that drought tolerant corn for western US dryland areas may be available from Monsanto as early as 2012.

Australia is a leader in drought tolerant wheat research with some field trials completed and others ongoing.

Frost tolerant crops would also be of benefit while work has also begun on nitrogen efficient corn that would also be valuable for wheat.

Fusarium head blight control via biotech is also of interest and field trials have been completed by Syngenta. Biotechnology may also help develop resistance to the new strain of stem rust called Ug99.

### **Consumer acceptance?**

Not every group is ready to sign on to biotech wheat. The Canadian Wheat Board, the government-granted monopoly marketer of Western Canada's wheat and barley, announced they will not support biotech wheat until international buyers of wheat provide assurances they will accept it. Consumers in Japan and the EU are the most concerned about biotech crops.

The CWB wants a wider focus than just herbicide tolerance, including fusarium resistance, increased yields and improved

## PROTECTING THE STAFF OF LIFE

By Terry Wanzek

I've seen a field of wheat go white in just a few days. It can look like a perfect crop, only to have fusarium head scab come in and wreck everything. This disease has the terrible power to turn an excellent year of wheat farming into a disaster in less than a couple of weeks.

Fortunately, I've managed to avoid this catastrophe... this year. My brother and I just finished our (North Dakota) wheat harvest. Our yield was slightly above average at 50 bushels per acre (3.4 tonnes per hectare). We typically count on 45 bushels (3.0 tonnes per hectare) so I've got nothing to complain about.

Even so, wheat farmers can do better. All it would take is a more effective way of fending off this disease. Each year, it is one of the most dangerous threats we face in producing wheat.

We have a number of tools for fighting it, but not the most effective tool imaginable, which is genetic modification.

More certainty in wheat production for farmers guarantees a stable supply of the 'staff of life' – wheat. Reducing a farmer's risk in growing wheat means more wheat at affordable prices for global consumers.

### **Wheat hasn't kept up**

Wheat farming simply has not kept up with the times. US corn and soybean growers have seen their yields skyrocket. So have their expectations. What they would have viewed as a bumper crop a generation ago is a mild disappointment today. That's how productive farming has become, ever since biotechnology improved the ability to contend with weeds and pests.

Yet wheat farming has not caught up. It remains stuck in the 20th century.

In other areas of life, we want more of everything: More power in our computers, more channels on our television sets, and more cup-holders in our cars and trucks. Wheat farming, by contrast, remains stubbornly stagnant.

The sad truth is that the fault is our own. We let the gene revolution pass us by. When it first became apparent that biotechnology could improve farming, especially in terms of weed control, many in the wheat industry said that they wanted nothing to do with it. There were sincere concerns about consumer acceptance, especially in foreign countries. More important, however, were the worries that seem to show up whenever something new threatens an established way of doing things.

In recent years, lots of US wheat farmers have had second thoughts about biotechnology. They've seen the success of GM corn and soybeans. They've envied it so much that many of them have started to abandon wheat in favour of farming these other crops.

Soon they may have reason to switch back: GM wheat is once again in biotechnology's research pipeline.

In time, we may see wheat benefit from a full range of biotech traits, such as drought resistance and cold tolerance. Consumers will experience direct benefits as well, if scientists find a way to help those who suffer from wheat intolerance.

Wheat farming won't ever be a risk-free business, but biotechnology promises to make it a lot less frustrating for producers and consumers alike. A plentiful supply of a staple food such as wheat is in everybody's best interest.

**Terry Wanzek grows corn, soybeans, and wheat on his family farm in North Dakota. He also serves as a North Dakota Senator and board member of Truth About Trade and Technology ([www.truthabouttrade.org](http://www.truthabouttrade.org)).**



quality. They are also concerned about segregating biotech and non-biotech wheat.

Most of their concerns are not much different from those expressed by NAWG in their November 2008 principles.

Planning ahead six, eight or 10 years for consumer acceptance is not an easy call for any food item, but necessary with the time needed to develop biotech traits and receive regulatory approval.

### New and favourable factors

But wheat growers now have a few factors in their favour not present five years ago.

First, biotech crops have now been produced for 13 years on over 800 million hectares around the globe without illnesses from the crops.

Second, the recent episode of high food prices has reminded consumers that an adequate supply of food is the ultimate consumer value. With the world population expected to grow from the current 6.8 billion to 9.2 billion by 2050, food security will remain a major challenge.

Third, another biotech food crop, rice, is already waiting to come on stage. The Chinese regulatory authorities have done all of the required testing to move biotech insect resistant rice to market with estimated benefits of \$4.0 billion per year. Also, rice breeders may release by 2011 a 'golden rice' genetically engineered to fight vitamin A deficiency in developing countries.

As in all markets where regulations do not preclude making choices, consumers will decide if biotech wheat will succeed.

**Ross Korves is an economist with Truth About Trade and Technology. This is a non-profit advocacy group based in Iowa, US, supporting global free trade and biotechnology. For more information see: [www.truthabouttrade.org](http://www.truthabouttrade.org)** ■

# Bridge the gap to feed the world

World food security will not exist without increasing yields in 'lagging regions', declared Dr Marco Ferroni, Executive Director of the Syngetta Foundation for Sustainable Agriculture, on his recent Australian visit.

Raising yields in developed countries like Australia is important, but this alone is not enough.

"To feed the world we must raise the productivity of all farmers, but especially smallholders in developing countries where the yield gap is the greatest," Marco said.

"Yields must rise in lagging regions, particularly Sub-Saharan Africa and parts of Asia, where there is a large rural population whose livelihood and food security depends on agriculture and therefore improved yields."

According to Marco, while Australia remains one of the world's key grain exporters, developing countries must raise their own food supplies or else face ongoing food shortages as the world's population increases and global diets change.

Productivity growth is still increasing, but at a reduced rate. In the 1960s and 1970s, yield was increasing by between three and four per cent each year. Since 2000, yield growth has dropped to under two per cent each year.



Dr Marco Ferroni.

The rate of population growth, meanwhile, has also decreased – but at a slower rate than yield growth.

The results of this are a significant decline in world grain stocks and a trend towards rising grain prices.

While Australia's contribution does help to stabilise markets, this country's wheat exports make up only two per cent of the world's grain consumption. In fact, grain from the world's top eight exporters only makes

up 20 per cent of total consumption. The rest comes from local markets.

"In developing countries, smallholders (farming properties under two hectares) make up the largest proportion of agricultural businesses," Marco said. "For example in China, 98 per cent of farms are less than two hectares, while in Bangladesh this is 92 per cent and in India it is 85 per cent.

"In Burkina Faso, the average farm size is closer to four hectares, but poor quality land puts major restrictions on agricultural yields," Marco explained.

"If we only increase production in developed countries, the result will be food aid forever – and that is just not sustainable.

"We must not only intensify agriculture, as was done in the 'Green Revolution' during the 1970s, but we must intensify sustainably, using land and water wisely." ■

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