

# **GM Crops and their Benefits for the Environment and European Agriculture**

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Fascinated by the science and the potential of Genetically Modified (GM) crops, and having first seen the introduction of GM Crops in the USA over fifteen year's ago, my interest in them has always been very strong and has grown as I have learned more about them each year.

The potential of GM crops for European Agriculture is huge.

## **Main Benefits for Producers Include**

- Improved Establishment of Crops
- Excellent Pest & Disease Resistance
- Higher Stress Tolerance-to Drought & Extreme weather
- Higher Yielding
- Consistency of Yield.
- Reduced Management
- Increased Productivity
- Increased Margin per Hectare.

## **Main Benefits for the Environment**

- Reduction in Pesticide Application
- Increase in Biodiversity
- Improved soil structure

## **Main Concern for the Environment**

- Some Weeds now Resistant to Glyphosate (Roundup)
- Only natural that this would happen over time as nature adapts.
- Farmer training to eliminate chance of Resistance in the future.
- 2013 Will see the introduction of a new dual action Herbicide that contains Glyphosate & a new 2-4-D Product offering an additional mode of action & more sustainable control of weeds.

## **The Study Tour**

This involved much planning & preparation and many flights over a 2-year period. Appropriate cereal farmers, research and commercial interests were visited all over the cereal growing world from which I have based my report:

- Argentina
- Brazil
- Canada
- Europe
- USA (Iowa, Illinois, Minnesota, Missouri, North Dakota)

Farmers in Europe are faced with many challenges. One that stands out is access to land for grain production.

Unlike many of our competitors across the world where quality land to grow their business is freely available to them at a more realistic cost.

The questions I have sought answers to are many and broad but come from a business perspective as a European farmer.

Grain farmers across the world are not hugely different to European grain farmers. We all face similar challenges in our Farming Businesses annually including; the cost of inputs, weather, grain price volatility, labour cost and availability, and machinery depreciation. Although it can be said that the South American farmers don't suffer from the same addiction to machinery that European farmers suffer from and maybe don't need to, as the window of opportunity for getting work done is usually much larger. Field sizes are huge and this also helps them to achieve maximum productivity from their machinery. This is something that would be the envy of all Grain farmers across Europe who are challenged with very narrow windows to get important fieldwork completed on time.

The stark reality is these Farmers, regardless of their scale, are our competition. At this moment in time, they have some serious advantages over European Farmers in relation to the access to GM/Biotechnology that they have at their disposal. Their costs of production are directly benefiting from using Biotechnology. They can achieve more even establishment in all conditions be it wet or dry. Disease resistance above and below the ground is improved, resulting in less chemical applications and lower diesel usage – noteworthy environmental advantages. Consistency of yields allows for more accurate budgeting and higher yielding varieties drive output.

All these technologies are available now to help achieve extremely low costs of production. Anything that can help reduce the costs of production whilst achieving a higher yield is obviously a clear advantage. The world market sets grain prices and no allowances are made for higher production costs in Europe. To compete we must have access to the same technologies that are available overseas.

My Nuffield report aims to identify the Benefits of GM technologies for European Agriculture and to learn from some of the mistakes that have been made as biotechnology was introduced across the rest of the World. Currently the pro and anti GM lobbyists are very much on two different sides of the fence in relation to growing GM crops, but without complete field trials of GM crops in Europe it is not possible to form a balanced opinion regarding their potential benefits or risks.

The destruction of GM field trials by NGO'S who are often quite militant and incredibly well funded is truly non-productive, extremely frustrating and will not benefit the human race over time. These field trials, backed by Government support, should be allowed to be completed first so that decisions can then be made, based on fact and not just opinion. Facts are friendly! Logistical decisions can be made.

These actions of the NGO'S are especially disappointing when we think of all the people across the worlds, who suffer from malnutrition and possibly some related health problems may, cheaply, be able to be overcome by some GM action in the plant. Now is not the time for scare mongering but time to let the true and sound science do the talking and to educate the public rather than going about misinformed by sensationalist media who use fear tactics

to sell more newspapers. This report will look into the influence that NGO'S and the media in general have on this debate.

### **Feed Supply; will there be adequate for Everyone?**

It is only a short time ago when in early 2008 forty countries around the world closed their borders to the export of feed grains and feedstuffs. This was the result of a shortage of grain across the world due to a series of weather events.

-Currently 40% of all the corn produced in the USA is used to feed the ethanol plants that produce fuel.

-Cattle & Sheep need 8 KG of grain to produce 1KG of meat

-Poultry needs 2 KG of grain to produce 1KG of meat

-Pigs need 3.5KG to produce 1KG of pork meat

This report aims to find out if we can use GM Crops to produce enough food for the future whilst still caring for our Environment.

Can we feed the world that's the question for all of us???

It's also worth noting that non-exporting countries hold half of world grain stocks. The world now has in storage less than 50 days of grain and more Wheat is being consumed than is currently being produced. It's staggering to believe that if we maintain current farming practicing and yields we will not be able to feed the world in less than 20 years.

We need a new green revolution now! GM/ Biotechnology will be the main drivers of that revolution.

### **Recommendations**

-EU Grain Growers must push for GM through our politicians and farm lobby groups

-Field Trials of GM, Oil seed rape & Wheat must now be undertaken by Teagasc

-Regulation of traits royalties' paramount

-Farm training & understanding of the GM issue is vital

-GM crops are the way forward for EU Grain Growers

-More Productive & More Profitable for the producer,

- Educate the wider community on the advantages/disadvantages of GM:

-Increased Biodiversity

-Better for the Environment

-More Sustainable Farming into the future.

-Improved chance of feeding the world population.

I would like to thank Nuffield Ireland and my sponsor One51Charitable Foundation for making my study possible.