By Hans Lombard

GM FOODS are truly safe

Claims by anti-GMO activists in media reports that GM (genetically modified) foods are "toxic, remain a health risk, have not after 20 years of GM crops been able to deliver the promised improvement in food security and the promised reduction in pesticides" are devoid of truth. It is time that the scientific facts are highlighted to emphasise the global safety and development of GM crops to repudiate these assertions.

I refer to some of these claims, in green italics, with my response.

After 20 years GM crops were unable to deliver the promised improvement in food security and the reduction in pesticides.

This is not true. GM-maize was planted for the first time in South Africa in 1998. According to Grain SA, in the 1990/91 season we harvested 7 825 000 tons of maize on 3 207 000ha or 2,44t/ha. The average maize yield before the advent of GM was 1,5t/ha. In the 2013/14 season we harvested 14 250 000 tons of maize on 2 688 200ha or 5,30t/ha – a 54% improvement to ensure food security. According to the latest figures, farmers are yielding over 7t/ha GM-maize on dry land and more than 20t/ha under irrigation. Significant improvement in yields have been achieved of which the use of GM technology is a contributing factor.

One out of four South Africans suffer from hunger.

This has nothing to do with GM-food. There is no shortage of food in our supermarkets, shops or fresh produce markets. For many years South Africa has been producing a surplus of food that is being exported. Food insecurity is largely driven by the lack of disposable income. It is not only in South Africa where people are faced with starvation.

According to the latest report from the Food and Agricultural Organisation (FAO) of the United Nations, 214 million people in sub-Saharan Africa live below the poverty line. With the exception of South Africa, no GM-food is produced in Africa.

The World Health Organisation's (WHO) International Agency for Research on Cancer (IARC) reported that glyphosate, the active ingredient in the herbicide, Roundup Ready, "probably" causes cancer.

This report was based on studies done years ago with rats and rejected by scientists worldwide as flawed. The chairman of the panel who came to this conclusion, Dr Aaron Blair, emeritus scientist at the National Cancer Institute, emphasised that "glyphosate definitely may not be classified as carcinogenic". The report provided no substantiated evidence that any human being, anywhere in the world, has developed cancer due to glyphosate.

Undisputed independent scientific research on the safety of glyphosate includes the following:

- The German Federal Institute for Risk Assessment (BFR) after a four-year glyphosate study for the first time evaluated more than 150 new toxicological studies. In addition, all available 300 toxicological studies were reassessed and it was concluded that: "The available data does not show carcinogenic or mutagenic properties." (BFR Study 2014).
- The joint United Nations' agencies FAO/WHO (Food and Agricultural Organisation and the World Health Organisation) meeting on pesticide residues in Rome, September 2014, reported: "Glyphosate has no acute toxicity, is not genotoxic nor carcinogenic." (FAO/WHO JMR report 2014)

In the 2010/11 season in South African glyphosate, Roundup Ready herbicide, was applied on one million ha of maize, 400 000ha of soybeans and 10 000ha of cotton. Worldwide in 2012 Roundup Ready was used on 120 million ha of crops. To date not a single substantiated medical or scientific case of cancer anywhere in the world has been recorded due to glyphosate.

To meet the increasing worldwide demand for glyphosate, Russia is currently in the process of establishing a glyphosate plant of US$150 million . China already boasts the biggest annual glyphosate production of 835 000 tons. Will these two countries invest so much capital in a product that causes cancer?

Roundup Ready has been on the market for more than 40 years, in more than 130 countries, and is the herbicide market leader.

Research on the safety of GM crops is questionable. Research is sponsored by the GM companies. Independent research is hampered as permission has to be obtained from the companies concerned.

Any person or research entity can at any time conduct research into any GM products, provided that they adhere to the existing permit regulations laid down by the regulatory authorities. The most authoritative research studies on the safety of GM foods have been conducted by independent researchers with no sponsorship from GM companies. This includes research by and paid for by the European Commission, spanning 25 years and costing over €300 million.

More than 150 research projects were conducted by 500 independent scientific groups and concluded: "GMOs are not riskier than conventional crops." Seven of the world's scientific academies, including the Royal Society of London, concurred.

Martin Quaim and Wilhelm Klümper, two economists at the University of Göttingen, Germany, conducted meta research on GM crops and found that biotechnology reduced chemical pest applications by 37%, increased crop yields by 22% and increased farmers' profit margins by 68%.

After 19 years of GM-crop production (16 in South Africa), South Africa is recognised as the most practical example of the safety of GM food. The country is the largest per capita consumer of GM foods. Maize is our staple diet. According to the Maize Trust, a cumulative total of 12 million ha was planted to GM maize between 2002 and 2012, producing a cumulative yield of 40 million tons.

This grain, in one way or another, was consumed annually by 50 million South Africans, 800 million broiler chickens, 1,4 million feedlot cattle and 3 million pigs without any substantiated medical or scientific proof of adverse effects for humans, animals or the environment.

Hans Lombard is an independent agricultural analyst and consultant to the agricultural biotechnology industry. For more information, email him at hans.lombard@neomail.co.za