

# Be aware of the cereal price killers

**The year 2007 will be remembered as the year in which the feed prices went sky-rocketing. Is the demand from the bio-fuel industry the cause or are nervous grain traders pushing up the price? Is this going to be a structural situation or will we see a change soon?**

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**T**he record high grain prices observed over the last few months is a major challenge for the poultry industry. The production factor has increased by 50% which represents 80% of the cost breakdown of the final product! Until 2007, most experts and analysts of the grain markets were predicting a continuation of the previous 'low' prices. How wrong they were and how true are the words of the French humorist Pierre Dac, who used to say 'Predictions are difficult to make, especially when they concern the future'.

Figures 1, 2 and 3 illustrate the production and consumption of wheat and the stocks of all grains for consumption. Here one has to be aware that when mentioning wheat in this article, it refers to 'Soft Winter Wheat', which worldwide is the most standardised and popular grain.

Over the last 40 years, the world consumption and production of cereals has increased in a rather consistent way (around + 1.5% per year). Today the global production of cereals (corn + wheat + barley + other cereals, rice exempted) is around 1600 Million tonnes (of which 40/45% is corn and 37/40% wheat). Stocks and world exchanges have roughly the same annual volumes, equivalent to only one month of consumption. This means that:

- Around 90% of cereals produced are



consumed in the country of production.

- A variation of the expected yields by for example 10% for a specific year, which is always possible given the variability of climatic conditions, could bring the theoretical stocks down to zero (which happened in spring 2007!!)

The five main exporters (USA, EU, Argentina, Canada, and Australia) account for 40% of the world exports. This means that 60% comes from smaller exports which are mainly on a regional basis and are therefore also very important. Cereals are directed to both the food (human) and feed (animal) industries. They can mutually substitute one another (Table 1).

### Key questions

Since the year 2000 consumption has dramatically exceeded production. This mainly explains why the feed industry is facing a sudden increase in prices. The commonly known microeconomic model of demand/supply (Figure 4) describes well the present situation: increase of price (P) when demand (Q1 to Q2) increases. This model however doesn't answer at least three key questions:

- Why do all prices of grains throughout the world follow the same trend at the same time, while 90% of the production is locally consumed (this is not necessary

- the case for all goods or services)?
- Why didn't the prices increase for several years while consumption was already higher than production?
- Why did the prices go sharply 'up to the sky' while consumption is just steadily increasing at a regular trend, thus not suddenly booming?

### A changing world market

The price of cereals is 'world market based', meaning that it is influenced more by the result of the global supply/demand match managed through a network of sophisticated tools (including 'future markets' of which Chicago is the most influential one) than reflecting a 'production cost + margin' (Table 2)

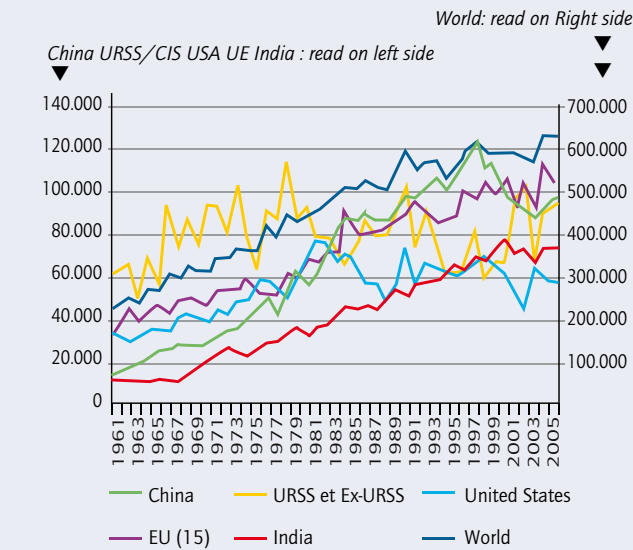
The price for most grains remained stable until spring 2007, but then all of a sudden the world changed. Despite the fact that demand was slightly in excess of production, buyers were initially confident to be supplied in quantity, quality and time according to their wishes because stocks were still sufficient to secure possible fluctuations of the crops. Buyers had no reason to stress the market in such a situation, since nobody likes to pay more than necessary.

The support policies for farmers' revenues in OECD (Organization for Economic Co-operation and Development) countries have also

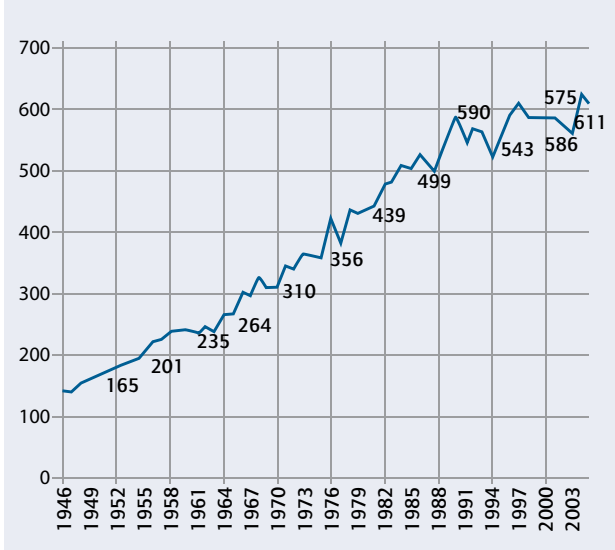
**Table 1 - The use of grains and how they can be used as substitutes**

Final uses of grains	Human food	Animal Feed	Biofuel (potential)
Corn	++	++++	++
Wheat	+++	+++	+
Barley	++++	++	

**Figure 1 - World production of wheat 1960 - 2005 (x1000 T)**



**Figure 2 - World consumption of wheat: 1945 /2003**



played a key role in stabilisation of the prices. In 2004, the subsidies totalled US\$274 million, accounting for 30% of the farmers' income in OECD countries (USA: 18%; EU: 33%, Canada: 21%), enabling them to continue to produce grains despite low margins/ha. On a global basis, these support policies have allowed farmers to produce larger quantities than they should have - given the market price in the OECD. Because prices have been kept somehow at an 'artificially low' level, the new development of productive areas in countries which had no financial capacity to support their agriculture has been discouraged. Under WTO pressure and other local considerations, it should be noted that those support programs tend to decrease in number significantly.

Anyway, in Spring 2007, reports of "Bad" climatic conditions both in the Northern Hemisphere (Ukraine, Western Europe) for the harvest of the coming summer, as well as difficult crop conditions to prepare the January 2008 harvest in the Southern Hemisphere have generated a 'panic' among the buyers. Given the very low level of stocks (Figure 5) plus the usual increase of consumption and the expected drop in average yield, the risk of a

shortage of grain appears to be serious enough to drastically change the buyer's previous phlegmatic attitude. Emotions and speculation have definitely played a big role in this summer's crisis!

**Why prices went sky-high?**

Since grains are used for various purposes, buyers have different purchasing attitudes depending upon the three following criteria:

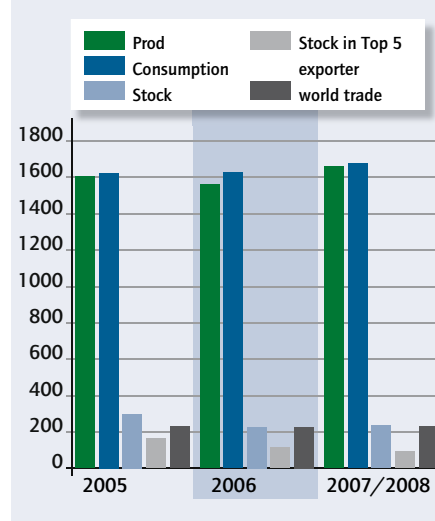
- possibility to substitute or not with other grains or products: *Risk exposure*
- % of cereals in the cost breakdown of the final product: *Level of sensibility*
- Added value of the sector: *Purchasing power*

In Spring 2007, 'bad crop news' focused on barley and wheat and the breweries and bakeries have thus 'bought' the market (high risk exposure + low to mid sensibility + high purchasing power) to secure their purchases on the terms which were considered as 'potentially short in supplies', thus until Summer 2008. The nervousness of buyers has been amplified by some speculative movements, which have lead to the present situation.

**What about the future?**

Over the next 20 years the consumption of cereals is expected to grow by 1 billion

**Figure 3 - Production consumption stocks: last 3 years of all cereals (corn, wheat, barley and others; rice excepted )**

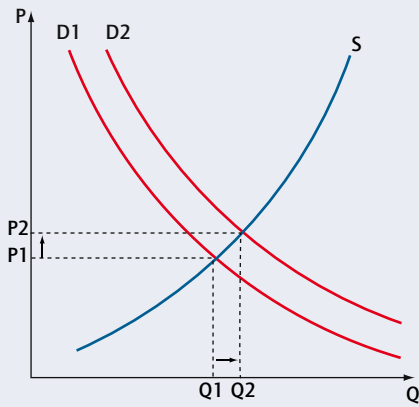


tonnes (data gathered and averaged from various sources) or + 65% of the current level, or + 2.5% per year. This increase is faster than in the previous period, mainly due to the demand of

**Table 2 - Why the match supply/demand on the world level is more transparent in cereals than in poultry meat**

Analysis of the market conditions	Cereals market	Poultry meat market
World quality standards for the products quoted	Yes (few standards recognised, understood and measurable)	Mostly national standards (local habits, regulations etc)
Long storage	Easy and cheap	Limited quantities (frozen) and expensive
Long distance transport	Same as above	Same as above
Trade barriers	Low and less (WTO effect)	Veterinarian regulations & limitations
Trading places and information	Yes: network of organised exchange boards	Local markets & partial information available
Conclusion	Transparent world market	Mainly influenced by regional circumstances (except frozen meat)
Result : price ( at a given time )	Reflect the global worldwide demand /supply Local price : World market + transport to destination	Reflects more the local supply/demand.

**Figure 4 - Microeconomy: Supply (S) and Demand (D) model**



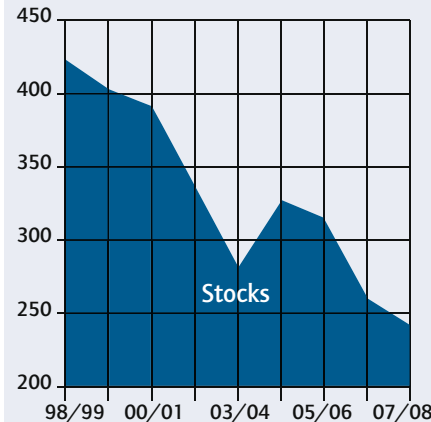
The price P of a product is determined by a balance between production at each price (supply S) and the desires of those with purchasing power at each price (demand D). The graph depicts an increase in demand from D1 to D2, along with a consequent increase in price and quantity Q sold of the product.

the booming middle classes of China and India. This is expected to represent an increase of + 40 M/tonnes per year (which is, as an example the equivalent of the production of wheat of Russia today).

Thus demand will increase more than the expected gains in productivity (on average + 1%/year) which means that in order to supply the market we will need to increase cereal production by expanding the surface of arable land.

During the period 1980/2006, in which we witnessed low prices of cereals, we have not seen any expansion in surfaces devoted to grain production. In addition: 70% of world production

**Figure 5 - World stocks all cereals (except rice) millions tonnes**



was benefiting from support policies, otherwise the production would have probably decreased. For the coming years, under the pressure of WTO, all those supports are and will be shrinking, meaning that most of the OECD farmers' revenue will have to come from the market price. In most open economies the income per hectare is about US\$600, which is based on a good yield of 3 tonnes per hectare and a return of US\$200/tonne. This income is usually not enough to cover the fixed costs (land, machines) and variable direct cost (labour, seeds, etc.) even if limited.

The very high prices offered for the harvest 2008 will stimulate farmers to bring new land surfaces into production. An expansion of around 10% together with an expected gain in yields, will be enough to cover the

increased demand for the coming 10 years. This will only be true if the margin/ha remains 'good enough' at an estimated grain price of around US\$300/tonne.

**More cropland available**

In the longer term (2015-2025), new resources of arable land also exist outside of the current production areas. FAO figures indicate that out of the 2600M ha land suitable for agriculture, 1500M ha is in use. No further growth of cultivated lands is expected in developed countries after 2015. Most of the reserves can be found in Sub Saharan Africa and South America, with 500M ha each. These figures might be optimistic since some of the land may be taken by the tropical rainforest and due to a ban on deforestation no longer available. Nevertheless, there is still enough reserve land available to sufficiently cover the increasing demand for food and feed grains. These unused fields require heavy investments to improve the infrastructure (roads, storage, land preparation etc.) and those investments will only be made if there is a reasonable expectation of sufficient returns.

All this leads to the conclusion that it is very likely that the most critical time for the poultry industry concerning feed prices is NOW (until Summer 2008), since the industry has to cope with both the incidence of extreme high feed prices + the effects of the sudden change. The most likely scenario after next year's harvest is that we will see a more balanced market price which will ensure economic stability for both crop farmers and users of food and feed grains. ■