

# **SEGREGATING OR IDENTITY-PRESERVING GRAIN**

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## SEGREGATING OR IDENTITY-PRESERVING GRAIN

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### WHY ARE WE INTERESTED

Several years ago as technology tools and knowledge began rapidly accelerating, we listed some over-riding principles we felt would affect our products and perhaps our style of operating going forward. This was especially true with our grain ingredients that serve as the base of most of food products. These were not unique to our company thinking.

These principles are still referred to as pendulums reflecting that a swinging or general shifting would evolve. Some products would differentiate more than others and there would be a wide diversity. The changes were also defined as evolutionary versus revolutionary as many of the issues would need to be solved by market forces requiring significant time. All the items also implied a need to or indicated a shift to identity-preservation or market segregation.

- 1) Shift from commodity to ingredient orientation: Food manufacturers often acted as if quality started at the door of the plant. Today, we are much more conscious of quality starting with the seed and that the differences between varieties are much wider than believed both as to manufacturing flows and product quality.
- 2) Shift from input traits to output traits: Primary customer of the seed industry was the farmer driving traits such as higher yields, disease and insect resistance, higher proteins, stronger plants, etc. As consumer demands have become increasingly influential for safe healthful products that taste good, output traits such as texture, digestibility, taste, various nutrient content, processing ability, etc also are being demanded from the breeders. This implies that the seed industry's customer shifts towards the consumer and the farmer becomes part of the conduit to deliver. This also injects a thought process where perceptions play a higher role and often are as important as facts.
- 3) Shift from open access to proprietary ingredients: This is more of a competitive issue as some new traits are being protected by intellectual property creating both opportunities and risks as technology creates wider diversity and potential.
- 4) Shift from independence to interdependence: This may be the most important as implies shift in market power and rules of engagement start to arise. This does not mean "vertical" integration where one party controls all links, but does mean "virtual" integration where all the players in the chain from the breeder to the consumer will need a higher level of cooperation. Market will need enhanced communication to allow consumer needs/ wants to steer product and ingredient development. A higher level of trust will need to exist and many will have to give up some degree of control. Some clearer definition of regulatory structure both private and public will need to evolve. And we need to develop some system

of value sharing to incent appropriate behavior and compensate appropriately to cover shared risk.

These shifts help define some of the implications food marketing companies face, especially those built on branded products. We will have increased scientific and ethical issues to deal with. As consumer knowledge grows, they will have an increasing impact on what breeders develop, what farmers grow, and how the grain industry handles ingredients directed into the food chain. Innovation will increasingly come from multiple sources instead of just internal R&D groups driving an expanded external focus and new collaborations. Companies will need to ramp up their ability to test and connect grain traits to consumer products and manufacturing productivity as well as providing feedback to breeders steering future development. Finally, we will need to develop the ability to segregate grain into differentiated ingredient streams while the market develops the proper protocols and procedures to function and value these efforts.

## **WHAT ARE WE DOING/LEARNING**

Our segregation process started with and will always include aggressive testing. We isolated individual varieties, expanded small scale testing, and started creating correlations between traits in grain and our product quality and manufacturing flows. We continue to gain enhanced insight into genetic and environmental impacts. The same variety grown in different locations may perform differently or the identical variety may vary in performance in different plants making the same product. As we supply other food manufacturers as well, we find they may prefer a different variety even though the products may be similar.

We started contract growing specific varieties with individual farmers for specific products with a few thousand acres four years ago. Farmer councils were formed to set guidelines and to help evolve the programs. Today we are over 250,000 acres for multiple products. Currently, certified seed is required to help insure expect level of performance and purity. We are primarily a wheat and oat company; thus, selection can occur by performance traits as all varieties have food and feed approval and tolerances are self-imposed versus a regulatory line. A private web site exists to share needed information between the growers, handlers, and us.

Communication with breeders and other technology providers was expanded to create a marriage between “what’s needed” and “what’s possible”.

The primary learning include what type of cleaning and handling systems work better, what type of controls are needed to insure high level of integrity, where and how to test and for what, what kinds of tolerances can we obtain, how to handle the variations that arise, how and what to communicate between parties, and how to connect grain traits more effectively to product performance. Complexity increases as size increases and we have quickly learned there is no “one size fits all”. Value sharing has to occur or system breaks down too easily.

## **WHAT ARE THE ISSUES TO SOLVE**

Risk and revenue have to move together. However, an imbalance of market power exists in most situations and liability responsibility when errors occur can be difficult to share as cost of correcting may be impossible for individual supplier to absorb, even if liability is clear. If a recall is at consumer level, the amount recalled will often be much wider than identified lot to protect brand equity increasing the risk even more. Balancing the interplay between economics and risk becomes more onerous as tolerances shrink or are set at zero or the marketing company factors in consumer needs/ perceptions.

The difference between certifying the process and certifying the product need to be bridged or understood. Depending on tolerances, if there is one, does testing create a clean handoff from a liability standpoint especially when the process works to a high level of integrity and yet the product fails due to something created only by a specific raw material. Again, companies will decide individually on how to balance economics and risk, how to protect brands, and how to satisfy multiple consumer needs with multiple products from a wide diversity of asset structures.

Economics will also drive traceability and the interplay with testing at different points in the supply chain. Most food companies today can trace their products from the retail shelf back to a very small point in time, often in minutes, to when and where it was manufactured, which ingredients were used and who supplied those ingredients. Testing, HACCP procedures, and a variety of GMP (good manufacturing practices) are all utilized to insure product safety. Complexity rises exponentially as you move farther down the chain as many ingredients such as grain, milk, sugar, etc. are blended together given sheer volume and speed of handling, the structure of the handling facilities, and the need to meet certain specifications. The economics of the market will again solve or define the degree to which this happens over time. We do know the band can be narrowed rather than saying I have no idea. Tracing should be for investigative purposes not safety purposes as appropriate testing at critical points in the chain provides the primary check.

## **ONE POSSIBILITY**

We believe improvements will continue to evolve. Most grain today gets an identifying lot number (scale ticket or some identifier) at point of first unload into the grain handling system. Perhaps a role government could play would be to evaluate the feasibility of extending the system that exists today for food products. All use a common system of UPC codes to allow traceback that perhaps could be extended further down in the chain where each individual farmer has a personal "UPC" code and even if grains are blended, at least it defines a band of suppliers for investigative purposes if ever needed. Cleaning of bins on a regular basis also narrows the band further into specific time frames. Complex, yes. Possible, maybe.

We do believe market will continue to shift to more segregation, more contracting, more variety in pricing, more focus on safety, more testing, and more integration of flows in narrower bands. The consumer will increasingly define the speed and degree each of these occurs.