# Overcoming Escalating Flavor Raw Material Costs

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## The benefits of strategies such as multi-platform flavors, country of origin material sourcing and process optimization

Escalating energy and material costs are a major challenge facing flavor manufacturers, and one that is forcing the industry to find new methods to adjust. The last few years have seen record cost increases in a large number of ingredients commonly used in the flavor industry, particularly those derived from corn, soy and wheat, and petroleum-based products. (**See F-1.**) As the global demand for energy grows, spurred by China and India, the food versus energy decision is likely to maintain these elevated prices.*

*A casual scan of recent financial reports around the industry underscores the growing problem. A number of companies have cited transportation, energy and higher raw material prices as drags on operating margins. These factors have been exacerbated by the disruption of supply from China during the Olympics. (See "Assessing Threats to Raw Materials Supplies," *Perfumer & Flavorist*, September 2008.)

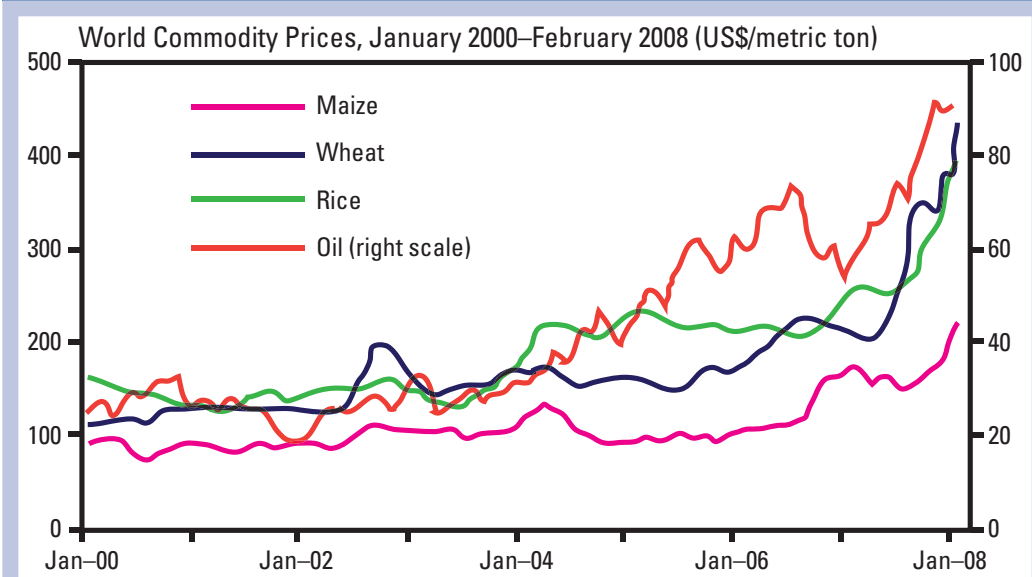
### Finding Opportunities Amid Cost Pressures

While the industry is actively looking internally at processes and efficiencies to offset price pressures, this type of environment also provides unique opportunities. How can flavor houses benefit from increasing price pressures? Innovation is the key! Customers are increasingly looking for solutions to increasing price aggravation, and flavor technologies can help provide that solution.

**Replacement systems:** One example of such innovation is replacement systems. It is important for us to understand our customers' processes and challenges, and then provide systems that can reduce their dependence on them. Meat extracts, hydrolyzed vegetable proteins and dairy-based ingredients are all categories that have experienced significant price aggravation recently. Flavor systems that can replace some or all of these components in the food system at lower cost is a welcome solution. During times of intense price pressure these types of solutions are valued just as highly as finding that great new flavor profile.

**Customer needs:** Understanding those services the customer does not value can be as useful as knowing what they do. It is important to realize that each customer is unique, and while some appreciate the full range of commercialization services

**Escalating crude oil, soy oil, corn and wheat prices** **F-1**




Sources: FAO international commodity prices database 2008, and IMF world economic outlook database 2007.

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a flavor company can provide (such as sensory, scale-up regulatory or marketing support), others may not require or value some of these. This sort of detailed customer awareness can allow us meet or exceed customers' expectations while applying resources where they are most impactful.

**Performance enhancement:** Using technology to improve product performance is another approach. Investing in innovation research during tight financial times can sometimes be a difficult proposition; however, this is precisely the right time to build new technologies and attempt to provide a point of differentiation. Thermal stability, process tolerance and longer-lasting impact are all attributes that have become more important than ever, and can help provide an edge over the competition.

**Multi-platform flavors:** Another recent trend is that manufacturers are increasingly looking to utilize single flavors across multiple product platforms in order to control inventory and reduce complexity. While this makes logistical sense for the customer, this strategy creates huge challenges for the developer, who has historically customized a flavor to a specific food matrix. Being able to adjust the nuances of a flavor to best fit the characteristics of the food matrix is a prized skill for the developer. Knowing which notes are enhanced or suppressed and adjusting accordingly is a key component to success. When a single flavor is used in multiple systems much of that customization goes out the door. Here, the developer needs to think about all the challenges a flavor may face and build a system that is robust enough to meet all of them. Ingredient selection becomes more important than ever and some of the fine nuances traditionally built in may be rejected.

**Communication:** I cannot stress this point enough. Effective development strategies depend upon thorough and accurate information from the procurement team. Externally, procurement interaction with the customer can help educate them on market trends and cost variances, allowing them to understand the implications and adjust accordingly.

**Trends:** Trend information also allows the flavorist to understand cost implications and possibly minimize aggravation when developing. To this end, flavor developers have to be much more in touch with commercial implications when developing rather than concentrating solely on the technical aspects.

## Raw Materials

Raw materials are a significant part of a flavor company's expense; therefore, large increases in material costs

provide huge incentive to look at internal costs and find ways of minimizing the impact.

One strategy for reducing material cost is country of origin sourcing. Instead of using only local suppliers or distributors, companies now often look to the source country for high-volume or major-spend ingredients, meaning sourcing is truly global. It is important to remember, however, that while country of origin sourcing can make economic sense, it also provides its fair share of challenges. Global sourcing increasingly means working in developing countries and regions such as South America and Asia, particularly China and India. These countries all have different and distinct legal requirements, languages, cultural norms, business practices, infrastructure and environmental risks that must be understood and negotiated. Mitigating risk caused by these factors and ensuring quality and safety attributes becomes more important.

Ensuring quality and food safety is of paramount concern, and auditing material suppliers is just one method of ensuring these factors. When auditing overseas suppliers, distance can be an impediment. Therefore, developers need to realize that sourcing an ingredient from a new global source can be a slow and laborious process necessitating the involvement of multiple functions. Collaboration between those functions responsible for ingredient selection is more important than ever. Purchasing, logistics, quality, R&D and inventory control all need to be on the same page and work to an agreed supplier and raw material strategy.

Having international business units in or close to the material source country can help mitigate many of these challenges. Local units are typically more capable of working with these suppliers and in overcoming quality, food safety and logistical challenges. Here again, close collaboration is important, ensuring business units understand each other's requirements and work toward an agreed strategy.

Although there are additional challenges and considerations when sourcing globally, the practice is one that is likely to continue—and even increase—over time. Setting up internal processes to manage these factors is the first step. Ensuring developers understand commercial implications and are fully linked into the company's global material and supplier strategy is crucial, and illustrates one of the ways the flavorist's required knowledge base is continuously evolving.

Material rationalization is another cost-control strategy that becomes even more important in times of sharp price increases. This process involves evaluating one's supplier base and material inventory to ensure the organization is purchasing the right ingredients from the right suppliers. Material inventories tend to grow over time, and unless there is a strategy to effectively manage the process it can become overly large and inefficient. The goal of the rationalization process is to limit a company's approved material palette to just those ingredients needed to effectively create formulations without limiting innovation or creativity. This often becomes a delicate balancing act that requires communication and negotiation between the involved functions and departments.

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## Processes

Organizations must optimize manufacturing processes to buffer themselves from the pressure of escalating material prices. Although ensuring manufacturing efficiency is a continual process, sharp increases in energy costs or in specific ingredient categories can provide new incentives and opportunities.

Material state is one area of opportunity. Flavor materials typically cover a range of physical states from liquid to paste to powder, and may pass through all of these states before reaching the customer. Processes to change the physical state of an ingredient or intermediate, such as spray drying a liquid to dry form uses energy and therefore adds cost to a material. So one of the questions one should ask is: "Is this process necessary, and can we remove this part of the process without affecting quality and shelf life?"

From a customer point of view, the ability to use a flavor in liquid or paste form rather than a powder may also help them optimize cost—an option they will likely appreciate. Working with the customer to identify the most economic product form that works within their manufacturing system is an important piece of the development and commercialization process.

Material concentration is another area of opportunity. When shipping ingredients to other domestic or international business units, the concentration of the ingredient (and thus its physical volume) is important. Cost analysis can identify the benefit of concentrating the material to reduce its volume versus the energy required to achieve this state. Many concentration methods are relatively simple, so ensuring the optimum ingredient concentration to minimize distribution cost and optimize the process efficiency is critical.

Manufacturing equipment is yet another key consideration. As raw material costs escalate, their proportion of overall expenditure also increases, giving them a greater commercial value. Optimizing manufacturing efficiencies such as minimizing energy usage or reducing yield loss can help offset some of the impact. Manufacturing equipment and process lines come under tighter scrutiny, and the benefits of investing in equipment that can control energy usage or reduce waste are increased.

In the long term, this increased focus on internal processes can be very beneficial, and can help organizations prepare for when price pressures decrease.

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