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# Is Just-in-Time Enough?

## Assessing the impact of a just-in-time production strategy and its current effect on the recovering flavor and fragrance industry

The past two years will certainly go down as among the most challenging in the history of the flavor and fragrance industries. The impact of global natural disasters—earthquakes in Haiti, Japan and Indonesia, floods in Northern India, and a drought in Brazil, for example—have contributed to significant raw material shortages. Limited supply is naturally affecting those producers who have chosen to adopt a just-in-time (JIT) production strategy. The question is why it has found favor with many manufacturers. And how exactly is this effect impacting the flavor and fragrance industry as a whole?

A JIT production strategy aims to improve a business's return on investment by reducing in-process inventory and the associated carrying costs. The basic principle behind JIT is that inventory is waste—it is seen as incurring costs, or waste, rather than adding and storing value. Implemented correctly, JIT focuses on continuous improvement and can increase a manufacturing organization's return on investment while also enhancing quality and efficiency.

In short, the JIT approach focuses on having "the right material, at the right time, at the right place and in the exact amount." The benefits of this strategy are clear and offer obvious advantages for the producer: they must only carry enough inventory to meet their requirements, and can reduce costs as there is no storage requirement for excess product. JIT producers also do not have to tie up significant amounts of working capital in stock during financially challenging times.

Despite these positives, the following questions inevitably arise when considering the JIT production strategy: Is there a situation when it isn't the most suitable approach? Can a JIT manufacturing strategy in fact lead to serious disadvantages for the producer and customer?

The answer may lie in other external factors influencing an industry at a particular time.

### JIT: an Analysis

Let us consider the key factors currently affecting the flavor and fragrance industries and the impact they are currently having on JIT manufacturing strategies.

***Worldwide shortages:*** An unprecedented number of natural disasters over the past couple of years—forest fires, earthquakes, floods and mudslides, to name just a few—have affected every region of the world. This has had a severe impact on crops, which, in turn, has reduced the availability of some raw materials. And, where availability may not always be affected, the quality of raw materials is, which means they are unsuitable for use and samples are rejected.

In addition to the limited availability of raw materials thanks to these natural influences, industry has also felt the effect of a stop-start purchasing trend among buyers. As with the majority of sectors, the flavor and fragrance industries were unable to avoid the impact of the global economic downturn. Customers began to fear that the economy was slowing to a stop and, as a result, ceased buying raw materials. Chemical plants subsequently closed and farmers planted fewer crops through lack of confidence, so there were fewer materials available to purchase. However, when demand started to increase once again, buyers rushed to secure supplies, causing immediate shortages.

These factors combined highlight a potentially negative impact of a JIT manufacturing approach. Reduced raw material availability, coupled with a reluctance to hold inventory because of its associated costs and the lack of financial credit offered to suppliers, has lowered the amount of buffer stock held within that chain. So, if a manufacturer does not hold enough of a particular product to satisfy a customer order, they or the customer must look elsewhere. This contributes to longer lead times between supplier and customer—up to 10 weeks in some cases—which disrupts the speed and efficiency of the supply chain.

***Increased volatility:*** The stop-start purchasing trend also exposes the pricing of these materials to greater volatility and increased influence by manufacturers and speculators who do hold stock. It therefore becomes much more difficult to forecast the price of raw materials, causing purchasers to be cautious when it comes to buying them.

In addition to this, the limited availability of crops means that suppliers of raw materials are both reluctant and often unable to commit to contracts even at open prices. This means that they have no obligation to their customers—the flavor and fragrance manufacturers—despite previous sales or historical relationships. At the same time, this lack of contract ensures that the manufacturers have no commitments or obligations to their suppliers should the price of the raw material fall.

***Strict shipping regulations:*** Lower available stock levels are further exacerbated by a lengthening of the time it now takes to move goods to suppliers following lot sample approval or other confirmations. High fuel prices have resulted in a reduction in the fleet size of ocean-going vessels, and a fleet-wide policy of low-speed transport is in force to maximize fuel economy. In addition, far stricter controls relating to the appropriate shipping of hazardous goods is contributing to an overall slowdown in the arrival of materials.

## JIT: Too High a Price to Pay?

Although a JIT manufacturing strategy offers clear benefits, its effectiveness does depend on other factors influencing an industry at any given time. For a JIT manufacturing strategy to be effective, it requires a level of price stability in the market, consistent material quality and availability plus a relatively steady demand. Flavor and fragrance ingredient producers at source cannot offer such guarantees. Manufacturers should therefore adapt their strategies to accommodate the challenging times ahead to ensure continuity of supply and support the industries' continued recovery.

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