

How to reduce food colourant costs by 20%?

(Exemplified by Beta-carotene 5% powder)

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Soaring raw material prices cause formulators of the food additive industry to ask themselves the same questions: Should I absorb the rising costs alone to keep the prices for my customers? How can I maintain the profit margin without compromising quality? What choices do I have to remain one step ahead of the ever rising raw material costs?

Before we try to answer these questions, let's first look at a characteristic aspect of the food additive industry e.g. vitamins and carotenoids: To stabilize the actives, convert the physical forms for better handling, or to increase the shelf life etc., we, the formulators of food additives use lots of carriers, and in some cases, the carriers make up more than 80% of the finished product. The availability and the price stability of raw materials are therefore essential for the success of the food additive industry.

As raw materials make up a major share in the manufacturing costs, the efficient use of raw materials (carriers) would be the first area to look for cost savings.

Opportunity for the food colour formulators

To illustrate the above let us take a look at carotenoid formulations: One of the most sold carotenoid formulations is Beta-carotene 1% Powder. This is a spray-dried powder containing just 1% of Beta-carotene and 99% of carriers, which are needed for stability and flowability. The price that the customers pay is for the 1% Beta-

carotene content, which serves as a food colourant and Pro-Vitamin A - and not for the carriers.

Then why do the Beta-carotene formulators not make higher concentration products to reduce the manufacturing costs? Altratene 5% WSC, which was launched recently by Allied Biotech Corp., addresses exactly this question. This is a spray-dried powder containing 5% Beta-carotene and 95% carriers. The customers only need 1 kg of Altratene 5% WSC instead of 5 kg of 1% WSC to achieve the same colours and functionalities in their applications. Even though the manufacturing costs of the 5% powder is higher, the savings on the carriers can offset the rising raw material costs. One could even expect a cost reduction of approximately 20% for the customers by switching from 1% powder to 5%. That would result in savings of around €300'000.- for a customer using 100MT/a of 1% powder! This does not even include the transportation and storage benefits which will result from the switch.

Challenges for the food colour formulators

If it is that simple to cut costs, why did the Beta-carotene formulators not do it a long time ago? The answer to this is not as simple.

One of the main reasons is the changed ratio between Beta-carotene and the carriers. To achieve the same application performances as the 1% powder, more effective encapsulation materials and processes are necessary.

Fortunately, the encapsulation materials are getting more and more powerful. This can be exemplified by one of the wider-spread encapsulation materials like Gum Acacia. The recent developments on modified Gum Acacia enable better encapsulations of oil phases. The higher costs are offset by the more effective emulsification and therefore fewer amounts of carriers are needed.

The second challenge stems from the manufacturing process: The 5% powder needs better and tighter process controls than 1% as the process gets more sensitive along with the high concentrations of the actives.

The last challenge but definitely not the least: The courage to innovate and to introduce something new! As the customers strive for multiple suppliers, many hard facts and explanations are needed to convince them to accept new products.

As always, critical times also create opportunities. One has to study the trends carefully and think with the customers and for the customers. All this requires even more innovative ideas. By introducing high concentrated products, multiple purposes are achieved: Cutting the manufacturing costs, reduction of the prices per active unit for the customers and contributions to the environment. The market penetrations of such products may take longer than me-too products. However, the efforts will pay off sooner rather than later when we follow the industry trends or even better, think ahead of market needs.

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