

Provision of dry mixes for soya and plant-based drinks

Flexible and sustainable production, fully documented for secure traceability

Homogeneous mixes of dry ingredients without caking

Hygienic production

High dosing accuracy and consistency of recipes

Ergonomic working environment

The Requirement

- Production of superior dry ingredient mixtures without caking, which allow uninterrupted manufacturing processes
- Hygienic production, with no sacks in the liquids area
- Consistency of recipes as a result of high dosing accuracy within close tolerance limits
- Homogeneous mixing of batches
- Tracking and tracing: continuous traceability of batches throughout the entire process chain
- Reduction in workload thanks to ergonomic work stations

The customer

Alpro is the European pioneer in developing 100% plant-based drinks and food products based on soya, almonds and hazelnuts (margarine, desserts, varieties of yoghurt, cream and meat alternatives)

The company has 800 employees for manufacturing in four European countries (Belgium, the Netherlands, France, Great Britain) and employs a further 5,600 staff through partnerships all over Europe.

Natural, transparent and sustainable – this is how Alpro sets the standards for a new level of confidence in the food industry.

In 1989, Alpro set up Europe's largest, most modern production line for soya-based food products using the UHT method in Wevelgem (Belgium). Almost 50 people work in quality control every day, helping to maintain the firms' standards that have been attested to by ISO 9001 and HAACP certification.

THE SOLUTION



"The AZO container system offers us unlimited flexibility and at the same time complete traceability of batches. Separating handling of dry ingredients from the liquids area make it possible for perfectly hygienic production"

Francky Bonte, Project Engineer, Alpro

The task

The manufacture of dry ingredient mixes needed to be kept separate from the liquids production area. This makes cleaning easier and is an enormous help in complying with hygiene regulations. Storage of dry ingredient mixtures needs to be simple, as they are needed for processing at different places and different times.

Another prerequisite in ensuring secure, uninterrupted production is homogeneous mixtures that dissolve better in liquids and form fewer lumps.

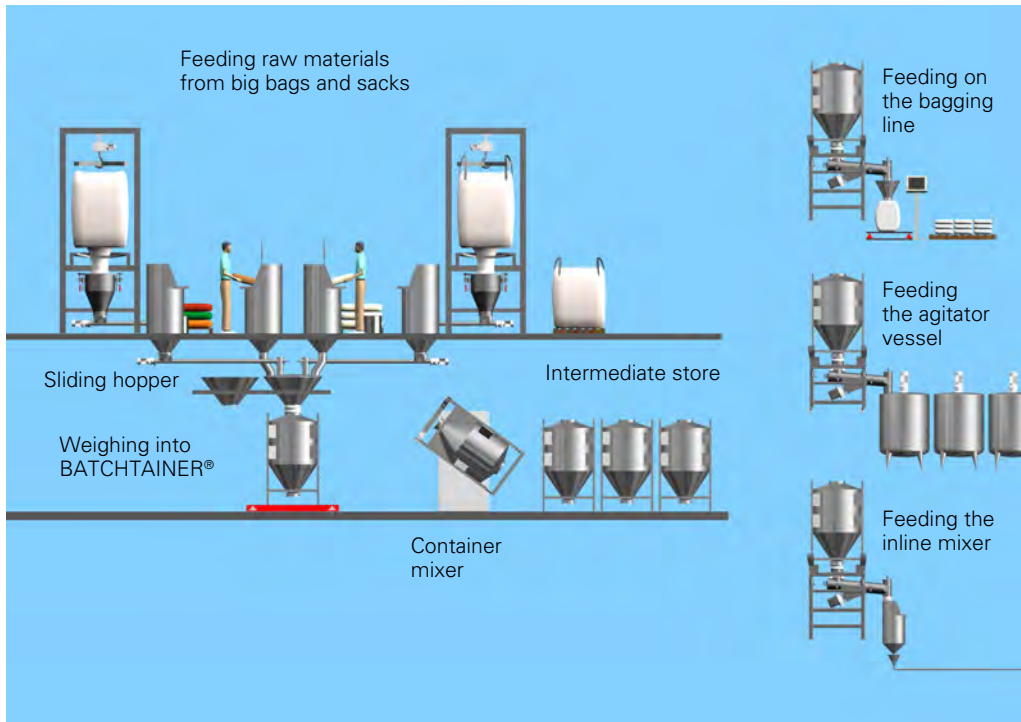
The manufacture of products of consistently high quality depends on excellent consistency of recipes. This can only be achieved by high dosing accuracy when

weighing the dry ingredients. Alpro assigns great importance to this.

Last but not least, one of the main tasks for AZO was to ensure fully documented traceability from the raw material to the end product and from the end product to the raw material throughout the entire process chain.

AZO SOLIDS Solution

Hygienic and flexible – mixing dry ingredients outside the liquids area



Material flow

Our production complies with HACCP and our customers inspect product safety and critical control points in production by regularly conducting strict audits.

In line with our philosophy, our aim is sustainability in the manufacture of dry ingredient mixtures as well. Our goal is to produce as little CO₂ as possible. The principle of sustainability extends to the packaging materials, which are all FSC-certified."

Francky Bonte, Project Engineer, Alpro

The AZO solution

Feeding raw materials from sacks and big bags

To meet the stipulated requirements, AZO N.V. developed a container system that offered maximum versatility and fully documented traceability of batches.

The system operates on two levels. The raw materials are fed on the top level. Two big bag discharge stations are designed for the provision of

brown sugar. They are fitted with a massager device to keep the product flowing. Built-in lump breakers break up any lumps that may have formed in the big bag. The dosing screw below the big bag station leads directly to the adjacent feeding hopper for reasons of space. The product is dosed via a hopper into a BATCHTAINER® here using another dosing screw. The BATCHTAINER® sits on a floor scales.



Feeding hopper for sack products



Big bag discharge station with massager device



Feeding raw materials via feeding hoppers and big bag discharge stations on the top level

Previously weighed ingredients like starch, salts, aromas and vitamins for example, are added in entire sacks via the two feeding hoppers as well as in partial quantities, which are weighed beforehand at user-guided weighing points. To keep the need for cleaning low when changing over products, there is one feeding hopper for light-coloured and one for dark-coloured products.

"The system we were supplied currently allows for a further increase in growth. This is why we have ordered a sugar silo from AZO N.V. for the main amount of sugar and we will then use both the big bag discharge stations for additional ingredients that are needed in larger quantities. This will mean we can save on further packaging materials and reduce waste."

Francky Bonte, Project Engineer, Alpro

Weighing into BATCHTAINER® and producing homogeneous mixtures of dry ingredients

Weighing into BATCHTAINER®

The previously weighed products are added using the feeding hopper and falling under gravity into the BATCHTAINER®. The floor scales, which the BATCHTAINER® sits on, are used in this case as a check weigher. The big bag discharge stations with adjacent feeding hoppers are followed by dosing screws, via which the raw materials are dosed and weighed in exact amounts into the BATCHTAINER®.

There are two sliding hoppers on a slide above the BATCHTAINER®. This arrangement makes it possible for one hopper to be used for light-coloured products and the other for dark products like cocoa for instance. This saves cleaning and changeover times. The BATCHTAINER® sits on a calibrated floor scales and there is a flexible dust-free connection between it and the hopper.



Storage of ready mixtures in BATCHTAINERS®



Weighing of light and dark products into BATCHTAINERS® using sliding hoppers

Producing homogeneous mixtures of dry ingredients

The BATCHTAINER®, filled according to the recipe, is now inserted into a container mixer and the components are blended to form a homogeneous mix. There follow various options for further processing of the mixture. BATCHTAINERS® can be stored temporarily in order to avoid bottle-necks during further processing.

"We currently manufacture around 20 recipes using 45 BATCHTAINERS®. This means we stay flexible and can produce the dry ingredient mixtures for the liquids area without working under pressure. Preparation of dry ingredient mixtures and liquids production have been separated."

Francky Bonte, Project Engineer, Alpro



Container mixer for producing homogeneous dry ingredient mixtures



Semi-automatic bagging line for filling the dry mixes into bags and sacks

AZO SOLIDS Solution

Further processing of dry ingredient mixtures and feeding in the liquids area

LP-409 1082 GB

Semi-automatic bagging of dry mixes

The BATCHTAINER® with the ready-mixed batch is deposited on a bagging line. The products are dosed via a dosing pipe into a semi-automatic bagging line, where bags and sacks are filled and packaged. A metal receiver ensures that no metal contaminants are allowed to enter the following processes. Once the bags are sealed and labelled, they are immediately ready as pre-weighed mixes in the Wevelgem factory but are also available for use in other Alpro factories.

Feeding agitator vessels via mobile discharge bases

There are two mobile container discharge bases for feeding several agitator vessels and they can be moved into position above the relevant hopper as needed. The BATCHTAINER® can be positioned here and the required amount of the product dosed into the agitator vessel via the dosing pipe.

Feeding an inline mixer

The BATCHTAINERS® are positioned on a container feeding station. A dosing pipe doses into a feeding hopper that has been installed underneath, where it is still possible to add products manually. Then the dry ingredients are blended with the liquids in a special inline mixer.

Plant controls

The process leading and visualisation system is connected to the higher-level SAP system. Operator terminals are available at the individual workstations for machine operators to give input as needed. Both inventory control and uninterrupted material traceability are ensured throughout the entire production process.

"We have total transparency from the raw material to the end product and, vice versa, from the end product to the raw material."

Francky Bonte, Project Engineer, Alpro



Container station for feeding an inline mixer
Left: mobile station for feeding the agitator vessels



Francky Bonte, Project Engineer at Alpro has the entire production in full view

Conclusion:

"We were totally satisfied with the advice we received from AZO N.V. All goals have been realised in close collaboration and any problems that occurred during commissioning were resolved together. Particular praise goes to the assembly staff, who delivered a turnkey system, both in terms of mechanical and control aspects, and who took our

exacting standards into account when laying the electrical wiring.

One highlight was the FAT at AZO in Osterburken. This is where we were witness to top quality and the responses to any additional requests we had were very flexible and individual. This attitude is not common among our suppliers."

Francky Bonte, Project Engineer, Alpro



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