

# CEPI demonstrates precision in micro dosing

Health-conscious consumers are the driving force behind nutrient enriched foods and CEPI says it is uniquely positioned to meet the demands of the functional food market

Consumer interest in food with benefits beyond nutrition continues to increase, making the functional food industry one of those experiencing the fastest growth globally in the last few years. Health and wellness are currently among the most powerful drivers in any market, and attitudes toward food are shifting to integrate the ability of any given meal to improve physical and mental health. Alongside naturally healthy foods, it's functional, enriched and enhanced foods that are getting the most attention during this paradigm shift – through the addition of biologically active components, virtually any kind of food from snacks to bread and pasta can become an asset, reducing the risk of diseases but also aiding with hydration, energy and stimulation, mental clarity, fitness, anti-aging, stress and sleep, and plenty of other advantages sought by modern health conscious markets.

Food, beverage and supplement sectors are focusing their research on the development of functional products ranging from snacks such as bars with added vitamins, proteins and fibres, to nutrient-dense and low-sugar fruit and nuts munchies, fermented foods with probiotic benefits, performance and energy drinks, sports nutrition such as protein

bars and powders beverages, meal replacements and dietary supplements. This is the era of sweets manufactured using stevia rather than sugar, integrated with vitamins, collagen and probiotics; functional bread with fibres and tocopherol and protein-rich pasta.

At this stage, it is crucial for food manufacturers to partner with suppliers whose technology can match their innovation and provide the precision required by functional products. CEPI is a direct manufacturer of bulk-handling systems with a vision prioritising research, flexibility and continuity. Installations are turn-key and completely automated and customised, built to match the individual needs of each project and manage all operations, from the loading of ingredients in the silos to the dosing of recipes on multiple lines. As such, and through vast food technology expertise and an impressive portfolio of solutions targeted at strategic functions like safe storing, accurate micro dosing and fully integrated automation and traceability systems, CEPI says it is uniquely positioned to meet the demands of the functional food market.



## Safe storing and accurate micro dosing

Constantly innovated, highly flexible and capable of handling a wide range of challenging materials, Trimix is CEPI's solution for the storing and accurate dosing of micro ingredients. In functional food installations, it's the ideal option for both the storing and the metering of the food compounds capable of adding further benefits to the final product, spanning from vitamins, to minerals, fibres, proteins, collagens, omega 3 and omega 6, fatty acids, nootropics, amino acids, and biologically active substances such as antioxidants and probiotics. Trimix can store premix in its units or create a premix from separate ingredients to be later dosed in the dough.

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The current Trimix model is the result of a decades-long experience in the management of powdered micro ingredients. Able to dose micro quantities through a high-precision scale by weight metering paired with the range and full integration of its automation systems, it has provided their installations with the highest levels of repeatability, precision and traceability. CEPI's approach is holistic and aims to cover and provide continuity through all manufacturing operations, with touch panels and traceability software being designed internally and tailored to the specificity of each mechanical installation.

Trimix is a broad-spectrum metering station for micro ingredients. It consists of modular and extendible hermetic units for powdered and granular ingredients, with fixed or mobile scale. Trimix has an easy-to-clean design with air blade system to clean the bearings and comes with technologies to prevent leakage in the surrounding environment and leftovers within the storing units or scale. It is fitted with ground or table scale for manual metering of minor ingredient, weighed trolley, dust exhauster, integrated homogeniser and level sensors. Loading can be manual or pneumatic, with direct suction of the product from the sacks.

Recent innovations have made it possible to combine Trimix with hoppers of all sizes, achieving higher speed, volume and flexibility. It can handle an ever-wider range of materials, including challenging ones such as lecithins and fibres. With higher capacity, an increased agitator and a wider discharge passage, it is suitable for continuous dosing in big production lines, without clogging or the formation of bridges even for hydroscopic ingredients such as crystal sugar.

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Other than in Trimix, storing of bioactive food compounds can happen in medium volume solutions, including a variety of minisilos and dump stations. All machinery is compliant with ATEX legislation, designed to match the needs of the ingredients they handle and built in appropriate materials. Conveying and metering operations are handled by completely mechanical systems such as feed screws and agitators, which don't stress the ingredients and aid in preserving the physical and chemical properties of the ingredients and their nutritional value. As with other productions that require high precision in dosing such as baby food and medical food, quality control is provided to ensure compliance with all relevant legislation.

### Automation and traceability

CEPI's installations are fully automated, with weight control in real time on all silos

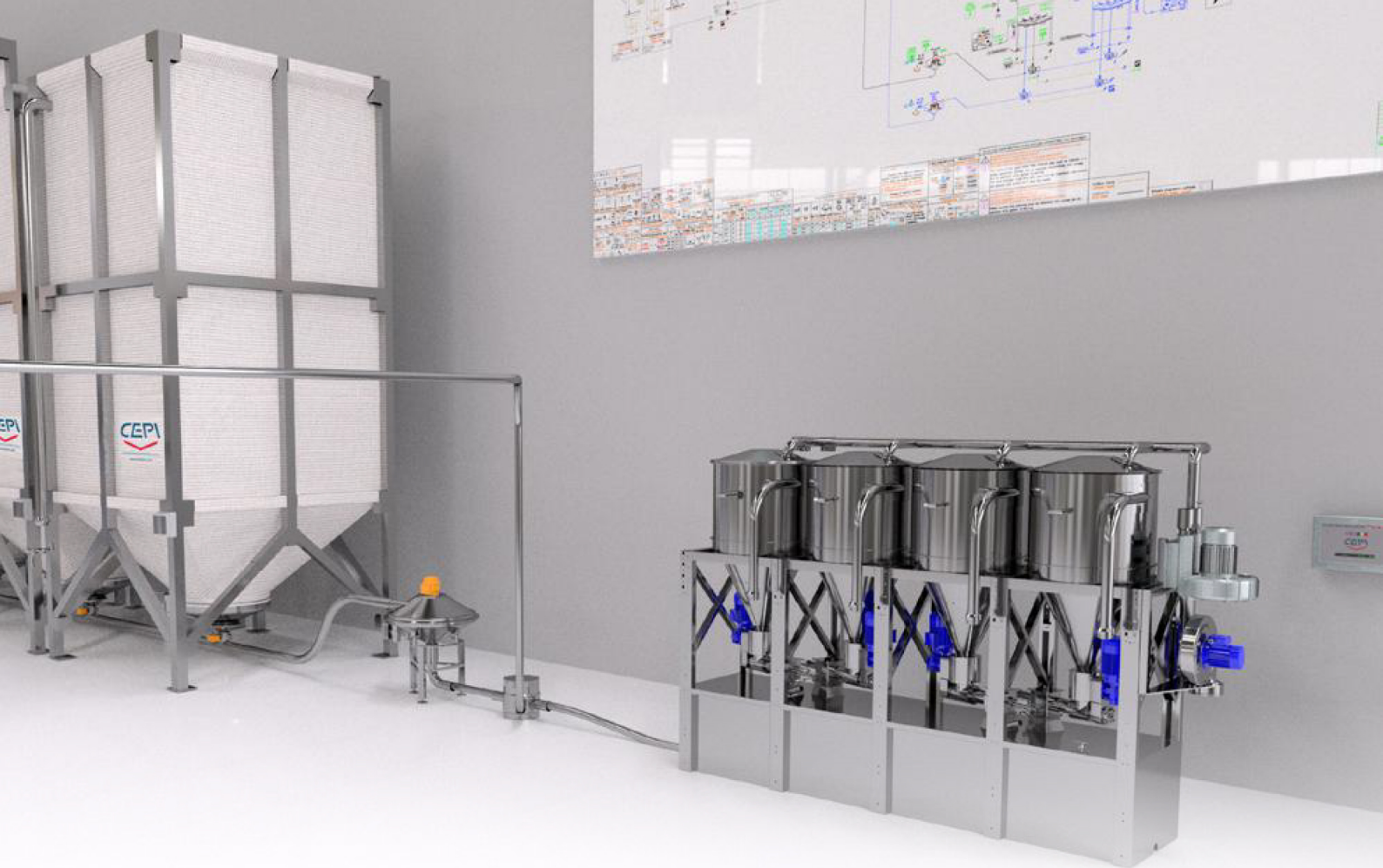
and hoppers, process management through personalised operator panels, and software for full traceability and warehouse management.

Each system is the result of a decades-long history synergic development alongside the mechanical system. With a team of 24 designers and programmers working on automation and software design, CEPI provides technical and human continuity through the development of a project that can become highly specific and complex. CEPI's solutions provide full horizontal and vertical integration, managing dialogue and data among our devices and those of other partners operating in the lines, after the dosing and before the raw ingredient management. CEPI says all of its data can be easily integrated with global ERP to achieve organisation-wide traceability.

With a view of the installation as a living organism, service accompanies all its developments through each expansion and change, and includes installation, start-up, helpdesk, monitoring and assistance on site.







Production management through touch panel handles recipe creation and management, ingredient and hopper parametrisation, overview for monitoring and maintenance of utilities with manual command, loading of silos and other stations such as mills, and other functions like washing and climatisation. CEPI' touch panels are developed across multiple platforms including Siemens, Rockwell and Codesys.

Integrated software from the CEPI tracking system provides complete traceability including control and digitalisation of all ingredient movements, control with barcode systems and warehouse management, greatly enhancing food safety and the optimal management of related alarms. Receiving and visualising data from the touch panels managing the production, CEPI tracking system creates a history of storing and recipe production operations, batch reports and consumption reports with dynamic graphics illustrating product, recipe or lot trends.

CEPI is a family-run company with an international outlook, based in Italy and operating globally, with offices in Malaysia

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to coordinate operations in the Asian market. In the past 35 years, it has worked with the most important companies from all sectors of food manufacturing and has developed an unparalleled range of technologies through efforts to meet the special needs of each installation and provide full cover of its process.

Multiple indoor and outdoor options are available for macro storing, in stainless steel or antistatic fabric. Extraction is automated and can be single or multiple, with vibrating cone and fluidisation for accurate FIFO management. Silos can be equipped with insulation, climatisation and dehumidification systems, and loaded directly from truck or from other silos or from dumping stations.

Sifting systems ensure food security. For the handling of flour, centralised cooling system are available for a gradual reaching of set temperature.

Dosing can be continuous or batch, positive, by loss of weight, by volume or by weight, in modular hoppers for powders and electronic scale-controlled tanks for liquids. Other applications include versatile and diverse fermentation systems, mills for crystal sugar, invert sugar technology, centralised systems for the production, storing and metering of salt solution, fat and liquid tanks, cold metering of fats, melters, emulsifiers and CIP washing system for a complete hygienisation of tanks and pipes.