

# Taste experience

Optimize savory flavors naturally



Balance and optimize flavors



Enhance cost efficiency



Reduce sodium content



Provide natural solutions

Many of today's consumers are looking for natural products that offer exciting and increasingly exotic flavor profiles, as well as for sodium-reduced options that fit into a health-conscious diet. Food manufacturers are developing new products to meet these consumer demands, while at the same time, looking for ways to formulate and produce as cost-efficiently as possible.

Successfully tackling challenges in flavor optimization, cost efficiency and sodium reduction through the use of natural ingredients provides market opportunities for innovative food manufacturers.

When developing a new savory product, the first priority is creating a taste profile that consumers will want to experience again and again. Organic acids and natural fermented ingredients play a key role in crafting delicious savory flavors, even in reduced-sodium applications.

Reducing addition levels of expensive ingredients, such as chicken or beef extracts and cheese powders, can improve cost efficiency but only at the expense of the consumer's taste experience. Corbion solutions are designed to give manufacturers a way to manage flavor profiles while reducing costs.

Adjusting formulations for preservation or sodium reduction can create challenges for producers in restoring the desired flavor profile. PuraQ® Arome NA4 is a natural flavor that compensates for lost saltiness in reduced-sodium savory foods, while PuraQ Arome 110 helps balance sourness in slightly acidic applications. These natural flavors serve as building blocks that enable processors to achieve optimal flavors much more cost-effectively than they can using

expensive taste enhancers. PuraQ Arome NA4 is mainly used in processed meat, bakery, sauces and dressings and ready-to-eat meals. PuraQ Arome 110 is well suited to a variety of sauces, condiments or soups.

## Natural solutions

PURAC® and the PURAC® Powders are based on natural L-lactic acid, which is produced by fermentation from sugar. PuraQ Arome ingredients are natural flavors produced by fermentation of specifically selected food cultures and natural substrates. The Verdad® portfolio contains multifunctional ingredients, based on fermentation. Verdad contains components which can enhance savory notes such as tomato, spices and herbs, and can be used in snacks and seasonings.



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## Flavor optimization and cost-efficiency

Cheese products including sauces, yogurts, dressings and typical cheese blends for snacks, all benefit from the dairy enhancing effect of lactic acid, in both liquid or powder form. **Figure 1** shows that adding 0.3-0.5% PURAC Powder to a formulation can replace cheese powder. This results in cost-savings of up to 5%.

Other applications which can benefit from PURAC or PURAC Powders are soup mixes, seasoning, sauces, gravies and instant noodles. Lactic acid enhances tomato, onion, soy, hot pepper, chili and ginger flavors. **Figure 2** shows an Asian sweet and sour sauce. With the addition of lactic acid, the tomato flavor typically becomes sweeter, and spicy flavors are enhanced.

## Balancing sourness

The most pleasing flavors and flavor combinations in savory foods result when you create balance. In low-pH applications such as sauces and dressings, Corbion's PuraQ Arome 110 imparts a mild, balanced sourness, with just a hint of spiciness and none of the sharpness or pungency of vinegar. This natural flavor is produced sustainably via fermentation.

## Sodium reduction

Using PuraQ Arome NA4 enables you to reduce sodium content of your products by up to 40%. As a natural flavor, it functions as a savory building-block, imparting spicy and salty notes.

**Figure 3** illustrates how the perceived saltiness can be restored after reducing the sodium content of a mushroom soup by 30%.

Product	Description	Appearance
PuraQ® Arome NA4	Natural flavor	(dark brown) Liquid
PuraQ® Arome 110	Natural flavor	(dark brown) Liquid
Verdad® Powder N6	Vinegar	Powder
Verdad® F95	Fermented (cane) sugar	(dark brown) Liquid
PURAC®	Lactic acid	(clear) Liquid
PURAC® Powder	Lactic acid, Calcium lactate	Powder
PURASAL® Powder S	Sodium lactate	Powder

## PURAC Powder enhances the taste attributes of cheese

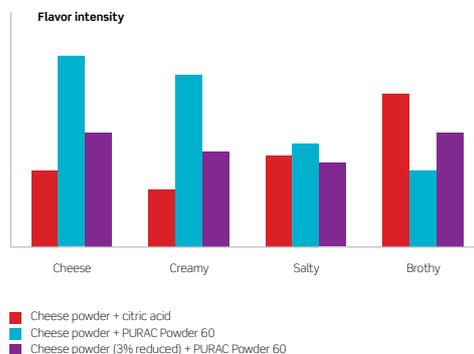


Figure 1

## PURAC Powder enhances the savory notes in Asian sweet and sour sauce

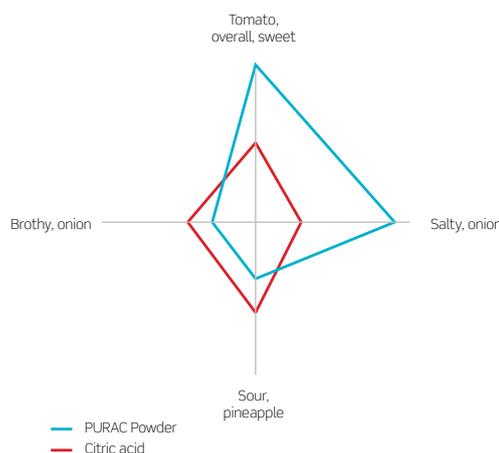


Figure 2

## Positive impact of PuraQ Arome NA4 on perceived saltiness in mushroom soup

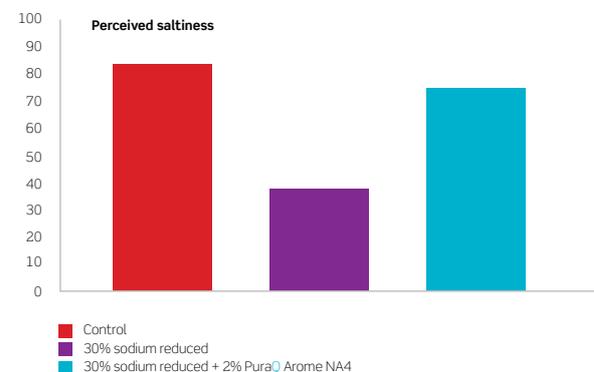


Figure 3

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Corbion creates innovative ingredient solutions for leading food manufacturers around the world. Our expertise inspires customers to craft foods that start flavorful, stay fresh and remain safe, from date of production to date of consumption. Using sustainable solutions that deliver real, consumer-focused value, we work side-by-side with customers, helping them grow and create delicious food that capture peoples' palates and earn their trust. At Corbion our priorities as consumers shape the solutions we create, and as a result, feel confidence and pride in serving our own families and friends the products we help make possible.

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