

## Reduce Water Syneresis in Yogurt



Yogurt is a widely consumed dairy products with its good source of nutritional properties that potentially benefits human health<sup>8</sup>. The texture of yogurt is an important quality parameter as its taste and flavour greatly affect their stability and consumers' acceptance<sup>2,6</sup>.

Syneresis (whey separation) is a common textural defect in fermented milk products that could be controlled<sup>12</sup>. It refers to the shrinkage of gel that occurs along with expulsion of liquid or whey separation due to instability of the gel network<sup>8,13</sup>. Some possible reasons that lead to whey-off in acid gels include high incubation temperature, excessive whey protein to casein ratio, low solids content and physical mishandling of the product during processing, storage and transportation<sup>12</sup>. To overcome these glitches, the most common approach is the use of different stabilisers to interact with the casein network<sup>5</sup>.

## Keeping Yogurt Stable with Stabilisers

Stabilisers not only help in preventing syneresis, it also improves the body and texture by increasing firmness in yogurt<sup>1</sup>. According to a systemic study, gelatin appeared to be the best hydrocolloid (among xanthan gum, carrageenan, modified starch) due to its ability to reduce syneresis, increase texture, viscosity, gel strength and lubrication properties in skim yogurt<sup>7</sup>. Next, experimental results have shown addition of carboxymethyl cellulose (CMC) at 0.5% give rise to the lowest syneresis with 90.66% stabilization and storage life of 22 days<sup>11</sup>.

Several investigations have confirmed the potential of xanthan gum and guar gum to improve yogurt stability and minimise issues with syneresis<sup>3,5,6</sup>. Yogurt made with pectin plus whey protein concentrate had significantly higher water holding capacity (~56%) and exhibited 15% less susceptibility to syneresis compared to the control group<sup>4</sup>. Moreover, starch is preferred in the yogurt industry due to its good thickening effect and its ability to reduce wheying-off in yogurt significantly, regardless of the starch type<sup>9,10,12</sup>.

### In Essence,

Stabilisers are important ingredients in manufactured yogurt or other dairy products due to their capacity to improve viscosity and decrease wheying-off during storage. At DPO, we are honoured to be in partnership with **Palsgaard** to bring you a range of tailor-made emulsifier and stabiliser blends that will help satisfy consumer desires for smooth, creamy and stable dairy products.

## References

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