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Physiochemical properties of modified starch under yogurt manufacturing conditions and its relation to the properties of yogurt

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1 **Physiochemical properties of modified starch under yogurt**
2 **manufacturing conditions and its relation to the properties of yogurt**

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8 **Abstract**

9 The characteristics of three acetylated distarch phosphates with different degree of cross
10 linking (ADP-L < ADP-M < ADP-H) and acetylation were studied under yogurt
11 manufacture conditions, and the properties of **of yogurts made with these starches** were
12 evaluated. The modified starch showed lower solubility and viscosity than native starch
13 (NS), but better resistance to acid and shear force was obtained. The acid milk gels
14 containing modified starches exhibited well-organized and homogenized microstructure,
15 while much denser structure with large aggregates were observed in control and NS
16 samples. The modified starch improved the properties of yogurt more effectively than NS
17 at 0.5% concentration, in terms of yield stress, consistency, apparent viscosity, thixotropy,
18 pseudoplasticity. By increasing the concentration, ADP-M showed increasing positive
19 effect on apparent viscosity, thixotropy, pseudoplasticity, firmness, adhesiveness of
20 yogurt; while no significant difference or adverse effect was seen with ADP-L or ADP-
21 H.

22 **Key words:** Starch, cross linking, acetylation, viscosity, yogurt, microstructure

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