**Zinc and probiotic supplementation improve Zinc and Selenium status of**

 **Indonesian young children**

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**ABSTRACT**

 Zinc deficiency is quite common in developing countries, especially in Asia with the Eastern diet rich of phytate. Probiotic, zinc and the combination were supplemented to 12-24 months Indonesian children for 90 days, and the nutritional status (serum zinc, serum selenium and bodyweight) as well as immune response were assessed and compared with placebo as control. Microencapsulated *L. plantarum* IS-10506 of dadih origin, was supplemented at 1010 cfu/day as probiotic.; 20 mg zinc sulfate monohydrate (8 mg zinc elemental) was supplemented as zinc. The results showed that supplementation of probiotic and zinc significantly increased the serum zinc (p<0.05) and serum selenium (p<0.05) of young children after 90 days supplementation as compared to placebo and also significantly increased bodyweight of the young children ((p<0.05). Taken together, a combination of probiotic *L. plantarum* IS-10506 at 1010 cfu/day and 8 mg zinc elemental supplementation showed potential ability in improving nutritional status of pre-school children.

Keywords : zinc, probiotic *L. plantarum* IS-10506, dadih, serum zinc, serum selenium, bodyweight, pre-school children