

Effect of spray drying temperature differences on the gross nutritional composition and solubility and sinkability of goat milk powder

ABSTRACT

Spray drying is a method of drying powder via microencapsulated from liquid rapidly with hot temperature in order to increase the shelf life. Hence, the objectives of the study are to investigate the effect of spray drying temperature on the nutritional composition and physical properties of dry milk powder of Saanen goat milk reared in Sandakan using maltodextrin as binder. The experiment tested the inlet air temperature variation from 140°C - 220°C with triplicates. The result was analyzed by a one-way analysis variance (ANOVA) using the Statistical Analysis System (SAS) version 9.4. The results showed that there are significant ($p < 0.05$) effects of inlet air temperature on dry milk powder in term of its protein content, fat content, moisture content and the sinkability of the milk powder. Among all of the treatments, the most sinkable temperature was at 140°C. Overall, the control powder, T0 = 180°C, however, is still preferable as nutritional value (for both protein and fat) shown to be higher in this powder and have acceptable moisture and physical properties. The finding of this study can be modified as for the further investigation to improve the quality of milk powder in term of its nutritional value and physical properties.