The natural yogurts are recognized as beneficial to health by having in its composition lactic bacteria; therefore, they are considered a probiotic food. Besides their fresh consumption, there is the option to use as a powder ingredient in developing other products, for example, the frozen yogurt. The freeze-drying has the advantage of dehydrating the food at temperatures lower than those of other methods, for example, spray-drying. This study aimed to evaluate physicochemically powder yoghurts produced by freeze-drying and by spray-drying. Natural yoghurt divided into three portions was used in the trials: one for freeze-drying, one for spray-drying and one for analysis of yoghurt in natura. The following physical and chemical analyses were made in triplicate: moisture, water activity, pH, acidity (lactic acid), proteins, lipids and carbohydrates. The results were examined by Tukey test (p<0.05). In the analysis of moisture, there was no significant difference between the sample freeze-dried (3.1%) and the spray-dried (2.99%); only between that in natura and those dehydrated (84.4%). The same occurred in relation to acidity, carbohydrates and water activity. In regard to protein (25.42% freeze-dried and 23.5% spray-dried samples), and lipid (20.0% freeze-dried and 21.1% spray-dried samples), there was significant difference among. The pH analysis showed no significant difference between in natura and spray-dried samples. In conclusion, the powder yogurt obtained by both methods of dehydration presented water activity and humidity compatible to its stability. The spray-drying method caused an increase in protein denaturation and lipid percentage.