ABSTRACT

LINCE. Development of Inulin Coated Sugar Using Fluid Bed Coating Technique. Under supervision of FERI KUSNANDAR and SUGIYONO.

Sugar is one of nine major ingredients in households. Its development through functional concept with adding inulin prebiotic in it, would give more value. Therefore, the objective of this research was to get the prototype of inulin coated sugar using fluid bed coating. The concentration of inulin prebiotic added in sugar formula was 3.5 g/100 g sugar.

The development of prototype was done through combination of two processing parameters in example spray rate and concentration of binder solution. These two processing parameters were important variables to affect the quality of prototype produced coating technique. Spray rates used were 5 ml and 10 ml of binder solution/minute/500 g sugar. The binder solution used were 10 ml, 15 ml, and 20 ml of water/100 g sugar. The best prototype was chosen based on the following parameters: water content, density, percentage of particles that passed mesh sieve, percentage of lump, solubility, viscosity of binder solution, run time process, sensory quality, inulin content, and shelf life.

The results showed that combination of spray rate gave significant difference for density of prototypes and run time process, while the combination of binder solution amount gave significant difference for water content, particle size distribution, solubility, and run time process. Prototypes with combination of spray rate 5 ml of binder solution/minute/500 g sugar; binder solution amount 10 ml of water/100 g sugar and spray rate 10 ml of binder solution/minute/500 g sugar; binder solution amount 10 ml of water/100 g sugar were the best among other combinations based on the physical test, organoleptic test, and run time process.

The best formulation was selected according to product quality and production cost. Prototype with combination spray rate of 10 ml/binder solution/minute/500 g sugar and binder solution with 10 ml of water/100 g sugar was chosen as an optimum formula. The prototype was acceptable organoleptically, with average run time of 15.25 minutes/500 g, and acceptable in term of quality until the end of storage studies.