ABSTRACT

THE EFFECT OF WETTING AGENT ON PHYSICAL CHARACTERISTICS OF PIROXICAM-MANNITOL-PVP K 30-POLYPLASDONE XL-10 GRANULE PREPARED BY FLUID BED GRANULATION
(Intermediate Product of Orally Disintegrating Tablet Piroxicam)

Aulia Mediana

Piroxicam is used for anti inflammatory and analgesic effect in the symptomatic treatment of acute and chronic rheumatoid arthritis or another rheumatoid disorder. These rheumatoid disorder are commonly happened to elderly patient or geriatric who have difficulties in taking conventional oral dosage forms because of hand tremor or dysphagia. Therefore, piroxicam was formulated to be an Orally Disintegrating Tablet (ODT) which disintegrates and dissolves in the mouth without water. One of methods to produce an ODT with porous structure is wet granulation using Fluid Bed Granulator (FBG).

Piroxicam has hydrophobic and electrostatic properties which makes it tends to stick on the metal surface of FBG. To avoid this problem, a wetting agent was added because its adsorption on the solid surface can modify piroxicam’s hidrophobicity and surface charge.

In this research, piroxicam was formulated in three formulas with different composition of wetting agent, 0,5% Tween 80; 0,5% PVP K-30; mixture of 0,25% Tween 80 and 0,25% PVP K-30 . The granules were evaluated for flow rate, angle of repose, moisture content, particle size distribution, density, compactibility, porosity, compressibility, and uniformity of active ingredient concentration. This research concluded that the addition of mixture of 0,25% Tween 80 and 0,25% PVP K-30 as wetting agent produces granules with better physical properties and weight recovery of granules.

Keywords: piroxicam, orally disintegrating tablet, fluid bed granulator, Tween 80, PVP K-30.