The agglomeration of powders is carried out with the purpose to obtain desirable properties such as low fine content, free flowing material and particularly instantisation. Pulsed-fluid bed has some advantages over the conventional equipment; including easy fluidization of irregular particles of different sizes that have a very cohesive behavior. The aim of this work was to study the morphological changes of the pectin powder produced by agglomeration process. The raw material used was high pectin methoxyl powder, containing about 30% sugar. The equipment used was a batch-fluidized bed equipped with a rotating spherical valve installed below the air distribution plate; water was used as a liquid binder. The process time, atomized binder flow, atomization pressure, nozzle height and mass of sample were maintained fixed at 20 min, 1.2 ml/min, 0.5 bar, 300 mm and 0.2 kg, respectively. The fluidizing air temperature, velocity and pulsation frequency were fixed at 65 °C, 0.58 m/s and 600 rpm. The following physical properties were determined: particle diameter, size distribution, morphology, and moisture content. Pectin granules showed a low moisture content of 8% (d.b.) and the mean particle diameter varied from 59 to 260 µm. The shape of the raw powder particles were compact and circular while the clusters had porous structure and irregular surface, which also was observed by the shape parameters. Pectin achieved the main characteristics of agglomerated particles, with less time to penetrate in the water surface and rapid dispersion in liquids and improved gel characteristics in relation to the raw material.