Hydrolysis of lignocellulosic biomass by hot-compressed water is creating an opportunity to obtain saccharides from both hemicellulose and cellulose for biofuel production. Among the various agricultural crop residues, sugarcane bagasse is one of the most abundant lignocellulosic materials in tropical countries. The subcritical technology was used as a hydrolysis method for sugars production from cellulose/hemicellulose of sugarcane bagasse. In this work the hydrolysis kinetics of sugarcane bagasse was investigated. Kinetics was conducted in a semi-batch reactor at 208°C and 20 MPa for 32-48 min. The water flow rate were in the range of 10 mL/min to 30 mL/min. Reducing sugars and total reducing sugars were determined by a colorimetric method. The results showed that the total reducing sugars recovery increased with flow rate, whereas reducing sugars deceased with flow rate. At flow rate of 22 mL/min reducing sugars were 7 % and total reducing sugars were 15 %. The higher total reducing sugars is due to less sugars degradation because of shorter residence time in the reactor. On the other hand reducing sugars decreased because the sugars were mainly in oligosaccharides form.