

**EFFECT OF STIRRING WITH HELICAL FLIGHT MODEL HOMOGENITY
AGAINST WASTE SLURRY FRUIT
(Waste Utilization Study Experiment Fruit Market *Gamping* In *Sleman*
District *Yogyakarta*)**

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ABSTRACT

Biogas is a renewable energy that has great potential to be developed in Indonesia, because the available raw material is relatively abundant. Waste fruit in *Gamping Sleman Fruit Market* is potentially used as raw material for biogas.

Stirring is one way to homogenize the waste slurry characteristics of fruit, so the expected effect on the optimization of biogas production generated. Stirring Helical Flight model is the type of mixer which can be operated at low speed thereby potentially saving energy. Homogeneity of the slurry is measured from the total solid content of the slurry mixing process, the slurry 1 and slurry 2. At the direction of the flow down, it may take longer to reach a total solid homogeneous compared to the flow rises. Stirring causes the slurry flows down two at the top of a slurry flow to the bottom. Slurry 2 pushed downward by the helical flight and eroded fins slurry 1.

The direction of rotation causes the slurry mixer 1 with a high viscosity moves up and then fell again in the area outside the helical flight. In the stirring position $\pm 60^\circ$ tilt there is a region where the homogeneity of the slurry runs very slowly, the area was called a dead zone at the bottom of the tube, with the furthest distance from the axis line mixer.

The most important geometric dimensions stirrer include: diameter helical flight (D), Turning helical flight (K), fin width ribbon spiral (b). Dt can be taken by $3/10$ diameter tube ($b = 2/10 Dt$.) The maximum amount of rotation is equal to Dt .

Keyword : fruit waste, slurry avocado, mixing, helical flight, viscosity, total solid