

## SIFAT FISIK EKSTRUDAT CAMPURAN TEPUNG GARUT DAN TEPUNG KETELA DENGAN VARIASI PENAMBAHAN TEPUNG JAGUNG DAN TEPUNG BERPROTEIN TINGGI

### INTISARI

Model penelitian ini dikembangkan untuk mengetahui pengaruh penambahan tepung jagung dan tepung berprotein tinggi terhadap sifat fisik ekstrudat campuran tepung garut dan tepung ketela dengan variasi komposisi bahan. Dengan kondisi proses yang meliputi ; perlakuan suhu, yaitu pada zone 1 (100°C), zone 2 (150 °C) dan zone 3 (150 °C); laju ulir 150 RPM ; laju pengumpanan bahan 65 RPM ; perbandingan kompresi ulir 1:1 dan diameter die 5 mm menunjukkan bahwa keberadaan fraksi tepung jagung maupun tepung berprotein tinggi memiliki pengaruh yang signifikan terhadap sifat fisik ekstrudat yang dihasilkan. Naiknya fraksi tepung jagung cenderung menaikkan nilai pemekaran, kecepatan ulir dan laju massanya sedangkan kadar air, densitas, kuat tekan dan kuat tariknya cenderung menurun. Di lain pihak naiknya fraksi tepung berprotein tinggi cenderung menaikkan nilai densitas, kadar air, kuat tekan dan kuat tariknya sedangkan besarnya laju massa, kecepatan alir dan pemekarannya cenderung menurun.

**Kata Kunci :** Tepung jagung, tepung berprotein tinggi, ekstrudat, kondisi proses, sifat fisik ekstrudat

## PHYSICAL PROPERTIES OF THE MIXTURE OF ARROWROOT AND CASSAVA FLOUR EXTRUDATE WITH CORN AND HIGH PROTEIN FLOUR ENHANCE VARIATION

### ABSTRACT

This experimental models was created to study about physical properties of the extrudate of the mixture of arrowroot and cassava flour which enhanced to corn and high protein flour that variates with dough composition. Processing condition that used in this research include ; temperature using, zone 1 (100 °C), zone 2 (150 °C), zone 3 (150 °C) ; screw speed rotation 150 RPM ; dough feeder speed 65 RPM ; screw compression type 1 : 1 with die diameter 5 mm. The results of this study showed that corn and high protein flour contents give significant influence to physical properties of the extrudate. When corn flour fraction was enhanced the trend of flow speed, mass acceleration and expansion degree increase but it made decrease the density, moisture content, compression and tensile strength of the extrudate. In the other hand the increased of high protein flour fraction tends to decrease the flow speed, mass acceleration and expansion degree but it made increase the density, moisture content, compression and tensile strength of extrudate.

**Key Words** : Corn flour, high protein flour, extrudate, processing condition, physical properties