

**KARAKTERISTIK FISIK EKSTRUDAT DENGAN PERLAKUAN
KOMPOSISI GRITS JAGUNG, TEPUNG SAGU, DAN KADAR AIR
BAHAN MENGGUNAKAN EKSTRUDER ULIR GANDA**

INTISARI

Oleh:

IFTINAN ARIBAH RATI INAYAH

20/460586/TP/12796

Produksi sagu yang melimpah di Indonesia ternyata tidak diikuti dengan harga jual dan tingkat konsumsi yang tinggi. Saat ini, pemanfaatan tepung sagu hanya terbatas untuk bahan baku pembuatan makanan tradisional. Salah satu inovasi pengolahan tepung sagu yaitu sebagai bahan baku campuran *grits* jagung dalam pembuatan makanan ringan ekstrudat. Kualitas ekstrudat dipengaruhi oleh variabel proses ekstrusi seperti rasio komposisi dan kadar air. Oleh karena itu, penelitian ini bertujuan untuk menganalisis pengaruh rasio komposisi dan kadar air campuran bahan *grits* jagung dan tepung sagu terhadap karakteristik fisik ekstrudat. Makanan ringan ekstrudat berbahan dasar *grits* jagung dan tepung sagu diproses menggunakan SYSLG-IV *twin-screw extruder*. Variasi perlakuan yang digunakan adalah komposisi tepung sagu (0%, 10%, 20%, 30%) dan kadar air (14%, 16%, 18%). Peningkatan rasio komposisi tepung sagu berpengaruh signifikan pada rasio ekspansi (2,38-3,68), *particle density* (0,18-0,43 g/cm³), *bulk density* (0,091-0,207 g/cm³), kadar air ekstrudat (8,74-13,82%wb), *water absorption index* (6,19-7,11), *water solubility index* (1,78-7,74%), *lightness* (66,58-75,13), *redness* (8,49-12,69), *yellowness* (33,34-59,12), *hue angle* (73,16-81,45°), dan *chroma* (34,86-58,78). Kadar air bahan berpengaruh signifikan pada semua sifat fisik yang diukur termasuk kekerasan (4,9-25,29 N/mm²). Berdasarkan pada analisis TOPSIS, perlakuan yang menghasilkan ekstrudat dengan preferensi terbaik adalah rasio komposisi tepung sagu 30% dan kadar air 14%.

Kata kunci : *grits* jagung, tepung sagu, ekstrusi, sifat fisik.

**PHYSICAL CHARACTERISTIC OF EXTRUDATE WITH
TREATMENTS OF CORN GRITS, SAGO FLOUR COMPOSITION, AND
MOISTURE CONTENTS USING TWIN SCREW EXTRUDER**

ABSTRACT

BY:

IFTINAN ARIBAH RATI INAYAH

20/460586/TP/12796

The abundant production of sago in Indonesia is not followed by a high selling price and consumption rate. Currently, the utilization of sago flour is only limited to raw materials for making traditional food. One of the innovations in sago flour processing is as a raw material for corn *grits* mixture in the manufacture of extruded snacks. The quality of extrudate snack is influenced by extrusion process variables such as composition and moisture content. Therefore, this study aim to analyze the effects composition and moisture content of a mixture corn *grits* and sago flour on the physical characteristics of extrudates. Extruded snacks made from corn *grits* and sago flour were processed using SYSLG-IV twin-screw extruder. The treatment variations were sago flour concentration (0%, 10%, 20%, 30%) and moisture content (14%, 16%, 18%). Increasing sago flour composition had a significant effect on expansion ratio (2,38-3,68), particle density (0,18-0,43 g/cm³), bulk density (0,091-0,207 g/cm³), extrudate moisture content (8,74-13,82% wb), water absorption index (6,19-7,11), water solubility index (1,78-7,74%), lightness (66,58-75,13), redness (8,49-12,69), yellowness (33,34-59,12), hue angle (73,16-81,45°), and chroma (34,86-58,78). The moisture content of material has signifikan effect on all measured physical characteristics including hardness (4,9-25,29 N/mm²). Based on TOPSIS analysis, the treatment that produces extrudates with the best preference is 30% sago flour composition and 14% moisture content.

Keywords : corn *grits*, sago flour, extrusion, physical characteristics.