

INTISARI

Iodium sangat penting dalam sintesis kelenjar tiroid yang mengatur pertumbuhan, perkembangan, dan metabolisme dalam tubuh. Fortifikasi iodium pada *modified cassava flour (mocaf)* dapat digunakan dalam program pencegahan gangguan akibat kekurangan iodium (GAKI). Penelitian ini bertujuan memperoleh retensi iodium selama penyimpanan dan pengolahan, melalui 4 tahapan penelitian, yaitu (1) fortifikasi/pengkayaan *mocaf* dengan kalium iodat (KIO_3), (2) Penyimpanan fortifikasi *mocaf* dalam variasi konsentrasi KIO_3 dan jenis kemasan, (3) Variasi pengolahan dari fortifikasi *mocaf*, dan (4) Absorpsi iodium secara *in vitro* dengan metode kantong usus terbalik. Hasil penelitian menunjukkan kadar air, kadar abu, kadar protein, kadar lemak tidak berbeda oleh penambahan KIO_3 , kecuali kadar pati dan amilosa. Kehilangan kadar iodium yang terendah dan retensi iodium yang tertinggi adalah fortifikasi KIO_3 konsentrasi 40 ppm. Waktu penyimpanan dan konsentrasi KIO_3 berpengaruh terhadap penurunan kadar iodium. Pengolahan berpengaruh terhadap penurunan kadar iodium dan retensi iodium, variasi pengolahan yang baik adalah dikukus pada konsentrasi KIO_3 40 ppm. Kadar air paling tinggi adalah direbus sedangkan yang paling rendah digoreng. Tingkat kecerahan (L^*) dan warna putih (*whiteness*) yang paling tinggi diperoleh pada metode direbus. Lamanya waktu penyerapan dan jumlah konsentrasi KIO_3 berpengaruh terhadap peningkatan absorpsi kadar iodium. Nilai absorpsi yang tertinggi sebesar 89,10% pada konsentrasi KIO_3 40 ppm dan menit ke- 90. Konsumsi *Mocaf* yang dihitung setelah diketahui nilai retensi iodium selama penyimpanan, pengolahan dan yang terabsorpsi adalah sebanyak 28,60-32,15 g/orang/hari (pada konsentrasi KIO_3 10 ppm). Fortifikasi *mocaf* dengan KIO_3 mempunyai retensi iodium yang baik selama penyimpanan dan pengolahan. Penyimpanan selama 4 bulan masih mempunyai retensi iodium yang tinggi, sehingga iodium yang tertahan dalam *mocaf* masih dapat mencapai waktu simpan antara 7-8 bulan.

Kata kunci: fortifikasi iodium, mocaf, kemasan, penyimpanan, pengolahan.

ABSTRACT

Iodine is essential element for thyroid gland synthesis which is responsible to regulate several processes during body growth, development, and metabolism. Iodine fortification in modified cassava flour (mocaf) can be used as a measure for iodine deficiency disorders (IDD) prevention program. This study aimed to determine iodine retention during storage and processing of fortified flour, through 4 experiment stages of (1) fortification using potassium iodate (KIO_3), (2) storage of fortified mocaf at various KIO_3 concentrations and packages, (3) various processing methods of fortified mocaf, and (4) in vitro iodine absorption measurement using reverse intestinal pouch method. Results indicated that flour at various KIO_3 fortification levels had similar moisture, ash, protein, and fat content, but different starch and amylose content. Lower iodine loss and higher retention was obtained at 40 ppm KIO_3 fortification. Storage period and KIO_3 concentration affected iodine loss, while processing had effect on both iodine loss and retention. The highest retention among processing method was obtained by steaming on 40 ppm KIO_3 fortified flour. The highest and the lowest moisture content were obtained through boiling and frying, respectively. The highest brightness (L^*) and whiteness flour was obtained by boiling. Absorption period and KIO_3 concentration had effect on iodine absorption level, with the highest result of 89.10% was obtained by 40 ppm KIO_3 treatment at 90 minute. Mocaf consumption which was calculated based on iodine retention during storage, processing, and absorption was 28.60-32.15 g/person/day (at KIO_3 10 ppm fortification). KIO_3 fortification on mocaf had good iodine retention during storage and processing. After 4 months storage, iodine retention remained high hence storage period with iodine retention at adequate level could be prolonged up to 7-8 months.

Keywords: iodine fortification, mocaf, packages, storage, processing