

ABSTRACT

Complementation of *Eucheuma cottonii* and *Vigna unguiculata* Germ Flour at Instan *Tiwul* from Fermented Cassava (Gari) Evaluated from Protein, Fat, Iodine, Iron and Fiber

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This research was aimed to study the nutrient value and sensory evaluation quality of *tiwul* from fermented cassava (gari) which complemented with *Eucheuma cottonii* and *Vigna unguiculata* germ flour. This research was an experimental study with one variable of *Eucheuma cottonii* and *Vigna unguiculata* germ flour proportion. Five treatments were different on proportion of *Eucheuma cottonii* and *Vigna unguiculata* germ flour with five replications.

The dry *Eucheuma cottonii* and *Vigna unguiculata* obtained from Pasar Besar, traditional market in Malang city, and the cassava obtained from Pasar Mangga Dua, traditional market in Surabaya city. Cassava fermented spontaneously for 36 ours before processed into flour to reduced more HCN which can caused iodine and protein deficiency to human body. The germination of *Vigna unguiculata* needed to reduce anti nutrients substances such as phytic acid, trypsin inhibitors, flatus-producing oligosaccharides and tannins which can diminish the availability of certain nutrients. The substances combined as according to proportion of each treatment to be processed to become *tiwul*.

The nutrient value of this product and the substances assessed in Laboratory of Health Surabaya. The sensory evaluation qualities were using the method of Hedonic scale in the questionnaire. The best treatment assessments were using the weight calculation from all variable of nutrient value and the sensory evaluation quality.

Result of this study showed that the treatment 4 (T4) represented the best treatment with the nutrient value protein 4,062 g, 0,375 g of fats, 1,610 g of rough fiber, 1,166 mg of iron, 74,06 µg of iodine and 6,860 g water content of instant *tiwul* per 100 g, and also it making charges Rp 455,00 per 85 g of instant *tiwul*.

Keyword: *tiwul*, cassava, *Eucheuma cottonii*, *Vigna unguiculata*, fermentation, germination, iodine.