**SIFAT FISIK DAN KIMIA BERAS PRATANAK PREMIKS YANG DIPERKAYA MINERAL DAN VITAMIN DENGAN BERBAGAI**

**JENIS DAN KONSENTRASI BAHAN PELAPIS**

**INTISARI**

Beras pratanak diakui cocok untuk dikonsumsi penderita diabetes. Sebagian besar penderita diabetes mengalami defisiensi mikronutrien Cr, Mg dan vitamin D. Penggunaan bahan pelapis *edible* dapat diterapkan pada fortifikasi beras pratanak untuk mengikat mikronutrien berupa mineral, vitamin dan ekstrak daun pandan. Bahan turunan selulosa MC (*methyl cellulose*), HPMC (*hydroxypropyl methyl cellulose*), CMC (*carboxyl methyl cellulose*), gum arab dan pati beras dapat digunakan sebagai bahan pelapis *edible*. Penelitian ini bertujuan untuk mengetahui pengaruh berbagai jenis dan konsentrasi bahan pelapis terhadap sifat fisik dan kimia beras pratanak premiks yang diperkaya mineral dan vitamin.

Penelitian menggunakan rancangan acak lengkap dengan perlakuan jenis dan konsentrasi bahan pelapis turunan selulosa (MC, CMC, HPMC)sebesar 0,15%, 0,20%, 0,25%; bahan pelapis pati beras 2%, 3,5%, 5% dan bahan pelapis gum arab 25%, 30%, 35%. Analisis sifat fisik dan kimia yang dilakukan yaitu bentuk dan ukuran, *color value, lightness value, alkali spreading value*, tekstur, kadar air, kadar amilosa dan kadar total fenol. Hasil yang diperoleh dilakukan analisis varian (ANOVA) pada tingkat kepercayaan 95%. Apabila terdapat beda nyata pada masing-masing perlakuan, dilanjutkan dengan uji *Duncan Multiple Range Test*.

Hasil penelitian beras pratanak premiksdengan berbagai jenis dan konsentrasi bahan pelapismempengaruhi sifat fisik *alkali spreading* dan mempengaruhi sifat kimia kadar amilosa, namun tidak mempengaruhi ukuran dan bentuk beras, *color value, lightness value,* tekstur/*hardness,* kadar total fenol dan kadar air. Beras pratanak premiks yang memiliki sifat kecerahan tinggi (*lightness value* 61,37; *color value* 18,53), suhu gelatinisasi sedang (*alkali spreading* *value* 5), kadar total fenol tinggi (0,81 mg asam galat/g berat kering) dan kadar amilosa sedang (21,35%) dihasilkan dari perlakuan dengan pelapisan CMC 0,25%.

Kata kunci: beras pratanak premiks, mikronutrien, fortifikasi, bahan pelapis

**PHYSICAL AND CHEMICAL PROPERTIES OF PREMIX PARBOILED RICE ENRICHED MINERALS AND VITAMIN WITH VARIOUS TYPES AND CONCENTRATION OF COATING MATERIALS**

**ABSTRACT**

Parboiled rice is recognized suitable for diabetics. Most diabetics are deficient in micronutrient of Cr, Mg and vitamin D. The use of edible coating materials can be applied on parboiled rice fortification to bind micronutrients such as minerals, vitamins and pandan leaf extract. Cellulose derivative material MC (methyl cellulose), HPMC (hydroxypropyl methyl cellulose), CMC (carboxyl methyl cellulose), gum arabic and rice starch can be used as edible coating material. This research aims to determine the effect of various types and concentrations of coating materials to the physical and chemical properties of premix parboiled rice enriched minerals and vitamins.

The research used a completely randomized design with treatment of type and concentration of cellulose derivative coating materials (MC, CMC, HPMC) by 0.15%, 0.20%, 0.25%; for starch coating materials 2%, 3.5%, 5% and for gum arabic coating materials 25%, 30%, 35%. Physical and chemical properties analyzed are shape and size, color value, lightness value, alkali spreading value, texture, moisture content, amylose content and total phenol content. The results obtained were analyzed variance (ANOVA) at 95% confidence level. If the difference of each treatment is real, continued by Duncan Multiple Range Test.

The results of premix parboiled rice with different types and concentrations of coating materials affect the physical properties of alkali spreading and affect the chemical properties amylose content, but it did not affect the size and shape of rice, color value, lightness value, texture / hardness, total phenol content and water content. Premix parboiled rice which has medium gelatinization temperature (alkali spreading value 5), high brightness properties (lightness value 61.37; color value 18.53), high levels of total phenols (0.81 mgGAE/g dry weight) and medium amylose content (21.35 %) resulted from treatment with the edible coating CMC 0.25%.

Key word: premix parboiled rice, micronutrient, fortification, coating materials.