

PROCESSING QPM CORN ‘SRIKANDI PUTIH’ VARIETIES AS A STAPLE FOODS SUBSTITUTE FOR RICE WITH LONG DURABILITY WITHOUT PRESERVATIVES

Deslaknyo Wisnu Hanjagi^{1*}, Milatul Ulfa², and Saefihim³

(Student in Department of Communication and Community Development Sciences, Kampus IPB Dramaga Bogor 16680)

¹Department of Communication and Community Development, Faculty of Human Ecology, Bogor Agricultural University, Indonesia.

² Department of Family and Consumer Sciences, Faculty of Human Ecology, Bogor Agricultural University, Indonesia.

³Department of Communication and Community Development, Faculty of Human Ecology, Bogor Agricultural University, Indonesia.

*Corresponding author: Deslaknyo Wisnu Hanjagi, Mobile Phone: (62) 85228428636, e-mail: deslaknyo.wisnu.hanjagi@gmail.com

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In Indonesia, the use of corn (*Zea mays*) as a staple food source is low. Communities argues that corn is the food of the lower classes, in contrast to paddy (*Oriza sativa*). This is because the value of fresh corn are quite low with a different texture to the rice, though corn has a higher nutritional value than rice. Adding value to corn as a qualified staple food in the community is required by processing corn into ready-made household products, such as instant rice. Corn used for manufacture is corn with high protein quality (QPM), namely the ‘Srikandi Putih’ varieties. Unlike yellow corn, texture of ‘Srikandi Putih’ instant rice like white-colored grains. White color will give the impression of sterile food. This color will attract the public to food diversification because white are symbolizes purity, cleanliness, and freedom. Instant rice from these materials can survive for more than five years.

INTRODUCTION

Although the background of corn as a Indonesia's second largest food commodity, the use of corn as a staple food has not been popular. Corn is commonly used as animal feed ingredients. Whereas the production of corn in Indonesia is currently 18,327,636 tons of dry beans per year, up by 697,888 tons (3.96%) than in 2009. Meanwhile Angka Ramalan II (ARAM II) of corn production in 2011 was last year estimated at 17,392,246 tons of dry beans, down as much as 935,390 tons (5.10%) than in 2010. Decrease in production is expected to occur due to a decrease in harvested area covering 225,925 hectares (5.48%) even though productivity rose by 0.28 quintal / ha (0.63%) [produksi jagung yang html]. With the productivity of this magnitude, corn can be used as a staple food source for the Indonesian society, not just fodder.

Table 1. The Nation Comparison of Farmland Width, Productivity, and Production of Corn.

DESCRIPTION	2009	2010	2011 (ARAM II)	IMPROVEMENT			
				2009-2010		2010-2011	
				ABSOLUT	%	ABSOLUT	%
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Farmland Width (ha)	4.160.659	4.121.676	3.895.751	-38.983	-0,94	-225.925	-5,48
Productivity (kuintal/ha)	42,37	44,36	44,64	1,99	4,70	0,28	0,63
Production (ton)	17.629.748	18.327.636	17.392.246	697.888	3,96	-935.390	-5,10

Disinterest of Indonesian society to consume corn as a staple food due to corn marketed without any added value. To get value-added, corn should be processed into other forms. One of them is processed into instant corn rice that can survive more than five years in dry and not damp atmosphere. In addition to advantages in terms of durability, instant corn rice practical enough for public consumption, only brewed with hot water and stirred for approximately three minutes.

The use of QPM corn 'Srikandi Putih' varieties as a base for the manufacture of instant corn rice will give more value in terms of nutritional value and shape. QPM corn varieties are native to Mexico are free of synthetic essence group. Age of plant varieties for the physiological range between 105 to 110 days. Potential yield 8.09 tons / ha seed beans with an average per harvest 5.89 tons / ha beans seed. QPM corn varieties recommended for planting in the lowlands during the rainy season. In nutrient content, 'Srikandi Putih' corn has a composition of nutrients that is more complete than the rice. 'Srikandi Putih' corn varieties currently examined by the Assessment Institute for Agricultural Technology (BPTP), Central Java, along with varieties of Synthetic Maros-2 (MS-2).



Figure 1. 'Srikandi Putih' Corn Varieties

<http://iaard.go.id/varietas/one/463/>

METHODOLOGY

Materials used in the manufacture of durable instant rice made from QPM corn 'Srikandi Putih' varieties is QPM QPM corn 'Srikandi Putih' varieties seeds, water, bowl, grinding machines, corn sheller tools, tarps to mat drying, the drying, enclosed storage areas, sifter, steamer, and sunlight. To improve the efficiency of time, then made the release of seed corn from the cob performed using a corn sheller. Corn to be processed to be done the corn rice with comminution process.

Ways of making instant rice corn is coarsely ground corn kernels, and then sieved using a sieve with 1.4 mm hole size. The fraction that passes is the chaff sieve, then ditampi to remove impurities, then washed and soaked for about three days, then drained until the water runs out. Immersion aims to obtain rapid and uniform absorption of water (Tawali et al.2003). Then the fraction of seed corn that is milled again large enough to obtain a small fraction of a grain of sand. After that the grains of the fraction of seed corn steamed for approximately two hours. Then the steamer is cooled. The next step for the preservation of rice made of corn drying in the sun for two days with sufficient light intensity. Rice that has been dried corn can be used at any time by pouring hot water and stirred for about approximately three minutes.

RESULT

Corn processing results in the form of rice with a small fraction of the size of the sand is white. With this method, the preparation of rice maize, calculated over the five days will be shortened to three minutes. This is because the method used on target to make instant rice is durable without preservative. This product is not easily damaged if treated in the room is dry and not damp. From the literature review, acquired a number of nutrition for these products such as: energy (150,00 cal), protein (1.600 g), fat (0,60 g), calcium (2,00 mg), phosphorus (47,00 mg), fiber (0,40 g), iron (0,30 mg), vitamin A (RE 30,00), vitamin B1 (0,07mg), Vitamin B2 (0,04 mg), vitamin C (3,00 mg), niacin (60mg), with a carbohydrate content of 74,26 g per 100 g edible portion of a total of 365 kcal of energy That is potentially as an alternative staple food.



Figure 2. Instant Corn Rice

'Srikandi Putih' corn varieties which has white color chosen as raw material for instant corn rice because white is the dominant color. White color is preferred by the people of Indonesia because the white color reflects purity. White on food by the people of Indonesia are considered as a symbol of cleanliness and sterility food. With white color on instant corn rice is expected to Indonesian people love this product for diversification so that Indonesia no longer need to import rice from other countries.

CONCLUSION

Corn is a commodity that can be added resale value. QPM corn 'Srikandi Putih' varieties can be used as raw material for the manufacture of instant corn rice with a small fraction of the size of the sand. In terms of nutritional value, instant corn rice with the basic material is quite high, even higher than the rice (paddy). This is because QPM corn 'Srikandi Putih' varieties was honored with several treatments that contain more nutritional value. Instant corn rice can be made in a very easy and practical as well as the estimated time very quickly. Simply mixed with hot water and stir until three minutes. Indonesian society paradigm that currently prefers rice (paddy) as food, staple will gradually be reduced by looking at these products are practical, durable, and affordable, so the food diversification program in Indonesia will be much better. It is necessary to address food security problems of Indonesia. White color on this instant corn rice give the impression of freedom and openness is expected to be the beginning of Indonesian freedom for food sovereignty

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REFERENCES

1. Babu, R., S.K. Nair, and B.M. Prasanna. 2002. Integrating marker assisted selection in crop breeding prospects and challenges. Part of Manual ICAR Short-Term Training Course: Molecular Marker

- Application in Plant Breeding, Sept. 26-October 5, 2002. Division of Genetics Indian Agricultural Research Institute, New Delhi.
2. Tawali, A.B., A. Laga, dan M. Mahendradatta. 2003. Pengembangan produksi bassang. Laporan Kemajuan Penelitian. RUSNAS Diversifikasi Pangan Pokok. Fak. Pertanian dan Kehutanan, Univ. Hasanuddin. 18 p.
 3. Saenong, S., Firdaus K., Wasmo K., Imam U.F. dan Akil, 2002. Inovasi teknologi jagung. Menjawab tantangan ketahanan pangan nasional. Puslitbang Tanaman Pangan. Bogor.
 4. Untoro, R. 2002. The effort alleviating iron deficiency anemia in Indonesia. Biofortification seminar: Breeding or micronutrient-dense rice to complement other strategies for reducing malnutrition. At Ministry of Agriculture.

