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# Evaluation of Adlai (Coix Lacryma-jobi)as Rice Substitute in Filipino Diet

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**Abstract**

Rice (*Oryza sativa*) and corn (*Zea mays*) are the staple crops of the Filipinos. Despite vigorous efforts to attain rice self-sufficiency, the Philippines remains a rice-importing country. To help assure food always on the tableïn every household, researchers and scientists began searching for plants which can be a substitute staple. Adlai (Coix lacryma-jobi) which bears grains already eaten by a few local tribes was given attention.

Growth and yield of two types of Adlai (Coix lacryma-jobi) in the Philippines were evaluated as affected by different levels of organic and inorganic fertilisers. Following Split Plot in Randomised Complete Block Design (RCBD), the experiment allowed gathering of agronomic and yield data subjected to variance analyses (ANOVA) and Duncan's Multiple Range Test (DMRT). Moreover, the cooking characteristics, sensory qualities and consumer acceptability of the two types of Adlai were investigated to determine the suitability of the crop as a substitute staple crop. Data on sensory attributes were analysed using Wilcoxon-Mann/Whitney Test.

Adlai type 'Tapul' emerged taller, had longer panicles, earlier flowering earlier harvesting time, more grains per panicle and hill, and heavier biomass than Adlai type 'Pulot'. 'Pulot', on the other hand, gave higher grain yield per area.

The amount and kind of fertilisers significantly affected the number of tillers, number of panicles, number of grains per hill, biomass yield, and grain yield. Either 40 kg N per hectare of inorganic fertiliser (45–0-0) or 80 kg N per hectare of organic fertiliser is recommended.

The optimum cooking ratio of Adlai to water is 1:1.8 for 'Tapul' and 1:1.7 for 'Pulot'. Cooking time was recorded at 67 minutes and height increase of cooked rice reached 200 % for both Adlai types. Comparing the sensory attributes as rated by 17 trained panelists, 'Pulot' has better aroma, glossiness, cohesiveness, tenderness, texture, taste, and colour. Cooked milled Adlai type 'Pulot'was rated by 124 consumers; 37.9 % gave Very Satisfactory rating; 57.3 % gave Satisfactory and only 4.8 % gave Unsatisfactory rating. The acceptability of 'Pulot' was enhanced further by its rice-like appearance. It was concluded that Adlai type 'Pulot' is acceptable as rice substitute.

**Keywords:** Adlai, Coix lacryma-jobi, consumer acceptability, fertiliser application, sensory evaluation

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