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Title: Comparative Study on the Agronomic, Nutritional Values and Consumer Acceptability of FHIA-21 (Tetraploid Hybrid) and Apem (Triploid French Plantain) in Ghana

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Abstract: The agronomic, nutritional composition of the green stages of fruit and the consumer acceptance of FHIA-21 (tetraploid hybrid plantain) from Honduran Agricultural Research Foundation was conducted in the forest region of Ghana. The standard AOAC methods were used to determine the moisture, crude protein, ash, crude fibre, potassium, iron, calcium, carbohydrate, sodium and crude fat. Pulp colour was measured with a Chromatometer. Results on the agronomy indicated that the hybrid was very tolerant to the black Sigatoka disease with high number of functional leaves at flowering and at harvest. The crop cycle was comparable to that of False Horn plantains. The yield performance of the hybrid was high ranging from 34-38 t ha⁻¹ across the locations. The yield values have been stable over the three-year study period. In addition, the FHIA hybrid plants were relatively short. The physio-chemical composition results showed that the hybrid had high fat (1.94%) and water (60%) contents. The potassium content was also high (1060 mg/100 g dry weight) however, the iron content (0.45 mg/100 g dry weight) was low. The high potassium level in the hybrid may be an advantage for use as a therapy. The tetraploid hybrid had bright orange pulp colour which was indicative of the presence of provitamins and carotenoids. The consumer acceptability results revealed that FHIA-21 compared favourably with the local triploid (Apem). The hybrid was accepted for ampesi, fufu and ripe fried plantain. However acceptability of the hybrid as ripe fried plantain was at ripening stages 3 and 4. Beyond these stages of ripening, the hybrid could only be used for processed (mashed) food recipes.

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