Table I. Relation of Color Intensity and Yield of HCN for 'Cassava Root Tubers[a]

Variety	Yield of HCN in ppm by AOAC method	Degree of toxicity	Color intensity by benzidine blue method
Palmeiras	377.5	Poisonous	Intense blue
CEPEC 62	313.0	Poisonous	Strong blue
IAC 780	200.0	Poisonous	Medium blue
Itapecuru	68.5	Poisonous	Weak blue
Engole boi	41.0	Tolerable	Very weak blue
CEPEC	27.0	Innocuous	Almost no color

[a] Few examples of 22 HCN determinations.

distilled water. Solution B should be stored in a dark flask.

Since benzidine acetate is not easily found, weigh 2 g of pure benzidine and warm up with 5 ml of a 50% aqueous solution of acetic acid. Add 500 ml of distilled water, agitate for 15 min, let stand for 5 min, and decant. Use this as saturated benzidine acetate solution.

The reagent to be used in the field is made up from equal parts of solutions A and B. Preferably this final reagent should be made up on the day of use, since it can not be kept for more than a week.

PROCEDURE

The cassava root tubers were either examined in the field or taken to the laboratory, depending on the distance. A drop of the reagent was put in the center of the filter paper square, and as it soaked into the paper, the blot became dome shaped. The filter paper was placed over a slice of cassava root of at least 1 cm thickness so that the blot's dome remained without contact with the surface of the slice. The dome functions as a trap for the HCN gas.

The speed at which the reaction occurs and the color intensity are proportional to the amount of HCN present in the root slice. To quantify the HCN toxicity, the speed of the reaction, the halo around the blot, and the color intensity (termed as either strong, medium, weak, or uncolored) are all observed. The entire test is completed in 3 min.

RESULTS AND DISCUSSION

In order to evaluate the practicability of the above method for cassava root tubers, 22 different cultivars were also tested for HCN using the alkaline determination method (AOAC, 1970). The correlation between the two methods was extremely good (Table I), indicating the relationship between the amount of HCN found according to the AOAC test and the color intensity as developed from the benzidine blue method.

It is said by some (Albuquerque, 1969) that 500 ppm of HCN in plant material is potentially lethal, whereas 50 ppm is innocuous. These values are naturally liable to change according to the analytical method used for their determination, government regulations, and the presence or absence of active enzymes (present in cassava) which liberate the HCN during some food processing procedures. Kingsbury (1964) suggested that more than 20 mg per 100 g may be potentially dangerous, and this certainly may be true for some dry seeds. In the case of cassava root tubers, the benzidine blue test would appear to be an excellent method for evaluating HCN levels, as it is quick, reliable, and can be easily performed when necessary in the field itself.

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Correction

IDENTIFICATION OF THE GAS CHROMATOGRAPHIC DIELDRIN AND ENDRIN PEAKS BY CHEMICAL CONVERSION

In this article by D. W. Woodham, C. D. Loftis, and C. W. Collier [*J. Agr. Food Chem.* **20**(1), 163 (1972)], in Figure 5, tracings (a) and (b) should be reversed.