


ORIGINAL ARTICLE

Sensory properties of selected biofortified common bean (*Phaseolus vulgaris*) varieties grown in Burundi

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Abstract

The dry common bean is an important grain legume used for human consumption worldwide. In Eastern Africa, Burundi has a significantly high per capita consumption of the crop. There has been significant research on the underlying agronomic traits of dry biofortified common beans, such as disease resistance. However, there is limited systematic information describing the sensory properties of these bean varieties, particularly in Burundi. This study evaluated the sensory properties of eight cooked dry biofortified common bean varieties using a panel of fifty-four (fourteen plus forty) persons for descriptive sensory evaluation and consumer acceptability tests. Kinure, a traditional non-biofortified common bean variety, was the control. Based on differences in the attributes of the bean varieties, two-dimensional principal component analysis (PCA) explained 58.94% of the variation. The attributes of astringency, consistency, color, juiciness, beany aroma, stickiness, and bean size contributed mostly to the differentiation of the bean varieties. A 95% PCA prediction ellipse displayed stronger congruity in the descriptive attributes of NUV130, NUV91, RWV1129, RWV1272, and RWR2245. In contrast, a deviation in the descriptive attributes of MAC44, MAC70, and RWR2154 was discerned. Regarding consumer acceptability tests, the varieties RWR2245 and MAC44 garnered significantly higher ($p < .05$) sensory scores on color, aroma, taste, texture, and overall acceptability. Therefore, the physical traits of cooked biofortified common bean varieties are a major contributor to varietal disparities in consumer acceptance studies. These parameters can greatly impact the adoption of dry biofortified common beans and could be of concern to common bean breeders.

KEYWORDS

biofortified, consumer preferences, cooked dry common bean, sensory properties, varieties

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