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Sensory Quality and Consumer Acceptation of Insect Incorporated Products in the Highlands of Madagascar

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Abstract

Food in Madagascar lacks diversity, especially for rural population. The carbohydrate rich diet is dominated by cereals and tubers constitutes. Protein source as meat and fish hold only a small part of the food ration. Edible insects are popular in rural area of Madagascar but their used is limited in traditional cooking methods like boiling and frying. The possibility of using edible insects as food ingredient was investigated in this study. The locust *Nomadacris septemfasciata* in a powder form was incorporated in two popular processed food products , a snack locally called “caca-pigeons” and French baguette. Locust powder was used in the preparation at rates of 0, 10 and 20 %. Proximate composition of end products was analysed. Sensory test was performed with a survey combining food neophobia, food disgusted and assessment of the products acceptation. Participants willingness to buy insect-containing foods was surveyd using choice experiments method. Respondents was composed of 35 % from rural area and 65 % from urban area. As results protein and ash content was increased significantly. For 10 % insect incorporated French stick, protein content increased from 7.54 to 11.48 %, the ash from 1.40 to 1.52 %. The protein content of 10 % insect incorporated caca-pigeon increased from 12.81 to 17.46 % and the ash content from 1.66 to 1.85 %. Food neophobia and disgust influence negatively the participants’ motivation to buy insect-containing food. Participants’ willingness to pay for insect-containing product depends on the nutritional value of the presented product and the recommendation they had from official organisation. The sensory analysis shown that the product enriched with 10 % of locust powder was the most preferred. Food products with locust powder have potential to improve protein intake in Madagascar.

Keywords: Edible insect, food disgust, food neophobia, locust, Madagascar, protein, “caca-pigeon”