

Two Bugs as a Food Source, in-Depth Research

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The Food and Agriculture Organization of the United Nations (FAO) indicated that some insects have a high nutritional value, as they contain quantities of fats, protein, vitamins, fiber, and minerals. Eating insects is more sustainable than meat and chicken. Compared to meat, insect production requires less agricultural land, or about half, than chicken. Cockroaches need about one-twelfth the volume of food needed by livestock to produce the same amount of protein, according to the FAO [1]. Raising insects results in the release of lower amounts of gas emissions. In addition, the edible percentage of insects reaches 80%, which is much higher than that of livestock, which is estimated at only 40% [2]. In the west there is aversion to eating insects, but there is a long history of eating insects in tropical regions, because insects are often larger, more available, and nutritious compared to colder or more temperate regions, making them a better source of food [3]. *Aspongubus viduatus* (melon bug) and *Agonoscelis pubescens* (Sorghum bug) are pests for watermelon and sorghum, respectively, are playing an important role in human nutrition and have much nutrient to offer also have high nutritional qualities and are indeed a good source of protein, fatty acids, and other nutrients (minerals) that are often in short supply in developing areas. The consumption of these insects therefore should be encouraged, and it would be ideal if these species were cultivated as well as collected [4].

Sorghum and melon bugs (Figure 1.) are a good source of edible oils as the percentage of crude fat was higher 60.0, and 45%, respectively, and they are good source of protein too were showed 28.2 and 27.0 % this protein is like what found in animal meat and turkey, although there is a variation in the protein quantity

and quality depending on the type of insect [5]. The bug protein contained 16 known amino acids, including all the essential amino acids. The most predominant fatty acids in melon bug oil were oleic, palmitic, linoleic, and linolenic acids representing 45.5, 31.3, 4.9 and 0.48%, respectively, while in sorghum bug oil representing 41.15, 11.41, 35.28 and 1.28%, respectively [4]. Insect oils were used in frying potatoes [6] and preparing biodiesel. Insect gelatin was prepared from the two insects and characterized as an edible Halal gelatin and used to prepare ice cream.

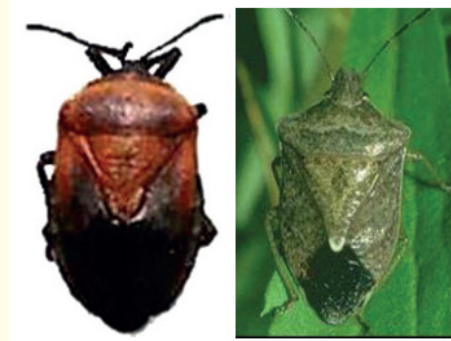


Figure 1: Adults of *Aspongubus viduatus* (melon bug, right) and *Agonoscelis pubescens* (Sorghum bug, left).