DEVELOPMENT OF THE SWALLOWABLE PARTICLE SIZE COMPOSITION OF MASTICATED SOYA BEANS

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The final composition of the size of particles of food one swallows has a consistent frequency distribution when repeated on the same subject using the same food (Jiffry, 1980). In this study, we investigated the development of the swallowable particle size composition of hard baked soya-beans when mastigated utilizing six equidistributed number of masticated strokes, from the total number of strokes used by the same subject to prepare it for swallowing. The above mentioned six equidistributed number of strokes, has been named as six phases of mastication. Moreover, we compared the size of particles produced at different phases of mastication with that produced from a coffee-grinder.

Five female subjects (21-23 yrs) were asked to masticate a convenient mouthful (average 3 grams) till they felt like swallowing. Thereafter, the masticated food was dried and sieved (12 sieves). The above procedure was repeated at the same sitting on the same subjects, but the masticated matter was collected at six different phases of mastication. Similarly, equal quantities of soya-beans were ground in a coffee-grinder for different time periods and analysed for particle size composition.

From the first phase of mastication upto the sixth phase (swallowable composition), the particles collected on sieves 212μm to 1000μm increased. This increment was most prominent on sieve 600μm, and showed a gradient of +1.95. Mostly particles larger than 1000μm were selectively broken down during mastication. However, in the case of the coffee-grinder such selective grinding was not shown.

Reference :

1. Jiffry, M. T. M. (1980). Journal of Oral Rehabilitation 7 (in press).