

THE INVESTIGATION OF THE MECHANICAL PROPERTIES OF FOODS WHEN SPOONING UP FOODS FOR MEAL SUPPORTING EQUIPMENT

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ABSTRACT

A new meal supporting system for disabled people who cannot eat foods by themselves has developed in this laboratory. It was succeeded to create prototype of the meal supporting system which has four concepts: “safe”, “reliable”, “comfortable” and “a sense to eat foods by oneself”. However, the prototype was not good at spooning up foods. It is necessary to derive the suitable speed and torque of rotation of spoon. In order to determine the rotational motion of spoon, the investigation of mechanical properties of foods by measuring the load applied to spoon was started. As the trial subject for this measurement experiment, this laboratory selected three types of foods: viscous particulate food, fried rice; sol-like liquid food, curry roux; gel-like solid food, jelly. In case of the viscous particulate food, as the rotational speed of spoon became fast, the load applied to spoon increased. While, in case of the sol-like liquid food and gel-like solid food, the rate enhancement of rotational speed of spoon little affected to the load applied to spoon.

KEYWORDS: Load Measuring Equipment, Meal Supporting Equipment, Mechanical Properties of Foods, Welfare Engineering