

CONTRIBUTION FOR PHYSICAL CHARACTERIZATION OF AROMATIC RICE

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Abstract

Rice is consumed mainly as whole grain, and quality considerations are much more important than for any other food crop. Rice grain quality preference varies from country to country and among regions. Nowadays, aromatic rice varieties are playing a vital role in global rice trading, and also in Portugal. The economic value of rice depends on its cooking and processing quality, such as water uptake ratio, cooking time and texture properties.

Three types of aromatic rice were collected and analyzed for biometry characteristics, cooking time, water absorption, and texture properties. The rice grains were collected from the Portuguese trade market. Biometric characteristics of all rice grains were evaluated by S21 (LKL) and C-300 (Kett) colorimeter. The rice flour gels texture was performed by a TPA (texture profile analysis), giving information about adhesiveness, chewiness, gumminess, hardness, resilience and cohesiveness. The extrusion force was also determined according to ISO 11747:2012.

Rice samples are commercially classified as long grains B type, because they presented a length higher than 6 mm and the ratio length/ width higher than 3. The samples presented a high degree of whiteness, with a strictly relationship between the total and vitrea whiteness ($r^2 = 0.95$). The cooking time varied from 12 to 17 minutes and these properties were strongly related with water uptake (from 155.7 - 209.1 g). Generally, aromatic rice cultivars presented different textural properties. Aromatic rice samples are different for hardness, adhesiveness, gumminess, resilience, and extrusion force.

From the results obtained it was concluded that the studied aromatic rice cultivars presented different physical properties, mainly the cooking time, water uptake and texture. These differences could be a commercial advantage considering the consumer point of view, because the enterprise could provide specific aromatic rice in order to attend different consumer targets.

Key words: *Aromatic rice, Biometric characteristics, Cooking time, Water absorption, Texture.*