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Properties of rehydrated freeze dried rice as a function of processing treatments

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1 **Properties of rehydrated freeze dried rice as a function of processing** 2 **treatments**

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8 **Keywords**

9 Freeze dried rice, rehydration capacity, texture, parboiled

10 **Abstract**

11 Freeze dried (FD) rice is ideally suited for long-life, ready-to-use applications such as
12 emergency foods and military rations, due to its very low moisture content, light weight and
13 rapid rehydration properties. This study ascertained the influence of rice type and processing
14 conditions on the structural and functional properties of FD rice, to better understand the
15 impacts of freeze drying on expected eating quality. It determined rehydration capacity,
16 breakage, texture and visual morphology. Cooking methods influenced the physicochemical
17 properties of FD rice with distinct differences between parboiled and non-parboiled rice. FD
18 non-parboiled rice could have over 50% of grains broken during processing. The SO cooking
19 method gave both the lowest rehydration capacities (193%, parboiled rice) and the highest
20 (367%, non-parboiled rice). FD parboiled rice was more similar in texture to the freshly
21 cooked equivalent compared to the non-parboiled rices. Parboiled rice is thus more suited to
22 the FD process.

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