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CHARACTERIZATION OF BARLEY GRAINS IN DIFFERENT LEVELS OF PEARLING PROCESS

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ABSTRACT

It has been shown recently that addition of barley grains to human nutrition translates into many benefits to the health. Therefore the purpose of this paper was to characterize the barley grains through the pearling process. The barley grains were dehulled on the rotatory drum with abrasive wall. The measured properties evaluated the physical, flow and fluid dynamic characteristics of barley grains at different levels of the pearling process. A maximum of $(49.08 \pm 5.25)\%$ mass-fraction removal was achieved, this meaning that all four commercial levels of pearling, ranging from 11% to 34%, could be sampled. This range of pearling process caused about 40% of reduction in thickness, 25% of reduction in the bulk porosity, 30% reduction in permeability and 17% reduction in the angle of repose. Barley grains were influenced in the pearling process kinetics and consequently in the physical properties and altering the particle-particle and fluid-particle interactions.

Keywords: pearling; dehulling; characterization; cereal; grains; properties

1. INTRODUCTION

Barley grain consumption has increased in the last years because of nutritional importance in human health. Research evaluating the insertion of barley grains into

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