UNIVERSIDADE FEDERAL DE VIÇOSA
CENTRO DE CIÊNCIAS EXATAS E TECNOLÓGICAS
DEPARTAMENTO DE TECNOLOGIA DE ALIMENTOS
Secretaria da Pós-Graduação em Ciência e Tecnologia de Alimentos

Campus Universitário – Viçosa, MG – 36570-900 – Telefone (31)3612-6705/6760 – E-mail: tca@ufv.br

TAL 797 – Seminário

04/10/2023

IMPACTS OF OZONE GAS APPLICATION ON BARLEY AND MALT

Pós-graduando: Bruno Leão Nascimento
Orientador: Prof. Edimar Aparecida Filomeno Fontes (Departamento de Tecnologia de Alimentos)

Beer is a drink widely consumed and that goes through different stages of processing until it reaches its final result. This drink is basically composed of malted barley, water, hops, yeast and adjuncts, being important the good choice of raw materials to obtain a quality product. It stands out among the raw materials the malt, obtained from barley (*Hordeum vulgare*) from the processes of maceration, germination and drying, which acts as a source of carbohydrates that will be hydrolyzed, originating fermentable sugars. Such raw material may be contaminated by fungi, among them those of the species Fusarium, which can cause gibberea, whose main consequence is the death of seedlings, in addition to loss of germination capacity of grains and presence of mycotoxins, while in beer can promote color and flavor changes. Thus, some studies have aimed to inhibit the presence of this microorganism, as well as improve the quality of malt, from the application of treatments with ozone (O_3), which is an unstable gas and strong oxidizing power. Its antimicrobial effect is due to oxidative destruction of biomolecules such as polyunsaturated fatty acids, proteins and enzymes, making cell membranes sensitive targets. In addition to the antimicrobial action, because it has a very short half-life, it quickly decomposes into oxygen, leaving no residues in the treated matrix. Among some studies already performed, it was noted that the application of ozone promoted reductions in the incidence of Fusarium, without negatively affecting the germination capacity of grains, promoting germination, improving enzymatic activity and consequent reduction of malting time.

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Orientador (a)

Orientado(a)