366 – NATIVE FUNGI PRODUCT AS A POTENTIAL INDUCTOR OF RESISTANCE IN FRUITS AGAINST PATHOGENS

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INTRODUCTION

Considering the occurrence of post-harvest diseases in fruits, the need to control them for commercialization, and the impacts on human health and the environment caused by chemical pesticides, the search for economically viable and sustainable practices in disease control has intensified. Some of these sustainable practices are based on the use of elicitors, and in our case, we used in post-harvest, pathogen-associated molecular patterns (PAMPs) which trigger genes involved in the response to plant defense. (1→3)-β-glucans are among the best elicitors ever characterized that start resistance induction in plants, but little is known about the activity of (1→6)-β-glucans as an immunomodulator in plants.

Considering the information presented, this study aimed to evaluate the effectiveness of a product - based on oligosaccharide (1→6)-β-Glucan (UTF-Glu) - extracted from a pathogenic fungus compared to the commercial ASM (commercial product Bion®) elicitor, and to verify their performance, inducing postharvest resistance in apples (*Malus domestica*) and grapes (*Vitis labrusca*).

METHODOLOGY

An experiment was carried out. with grapes, from the Bordô and Niagara varieties and a second, with apples from the Fuji and Gala varieties. The experiments were carried out separately, in a completely randomized design with four replications. In both experiments, the treatments used were ASM (Acibenzolar-S-Methylic); UTF-Glu (B-Glucan obtained from native pathogenic fungus) + control (water). The treatments were applied with a sprayer, approximately 5 ml per fruit. After applying the treatments, the grapefruits were challenged by *Glomerella cingulata*, and the apple fruits by *Penicillium expansum*. The variables evaluated were: severity, fruit firmness (Brix°) and quantification of the SOD enzyme (E.C 1.15.1.1)

Figure 1. Conducting experiments with grapes and apples. Pato Branco, 2022

RESULTS AND CONCLUSIONS

For the experiment with grapes, the analysis of variance revealed a significant interaction ($p<0.05$) for the variables firmness in Bordô variety and for severity in both varieties (Bordô and Niagara). As for the experiment with apples, a significant interaction was observed in all variables and for both varieties.

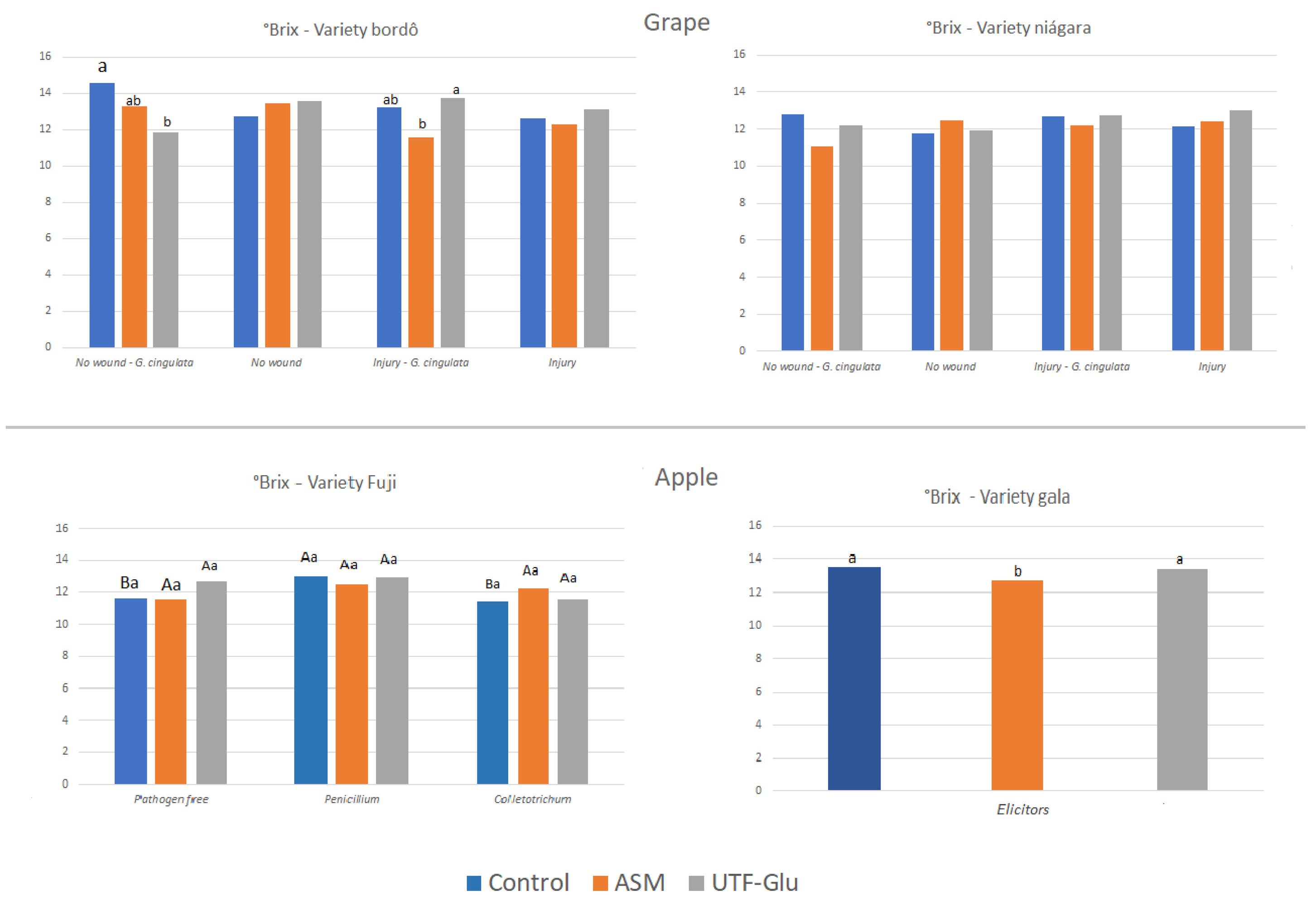

Figure 2. The firmness of fruit from apples (Fuji and Gala) and grapes (burgundy and Niagara). Pato Branco, 2022.

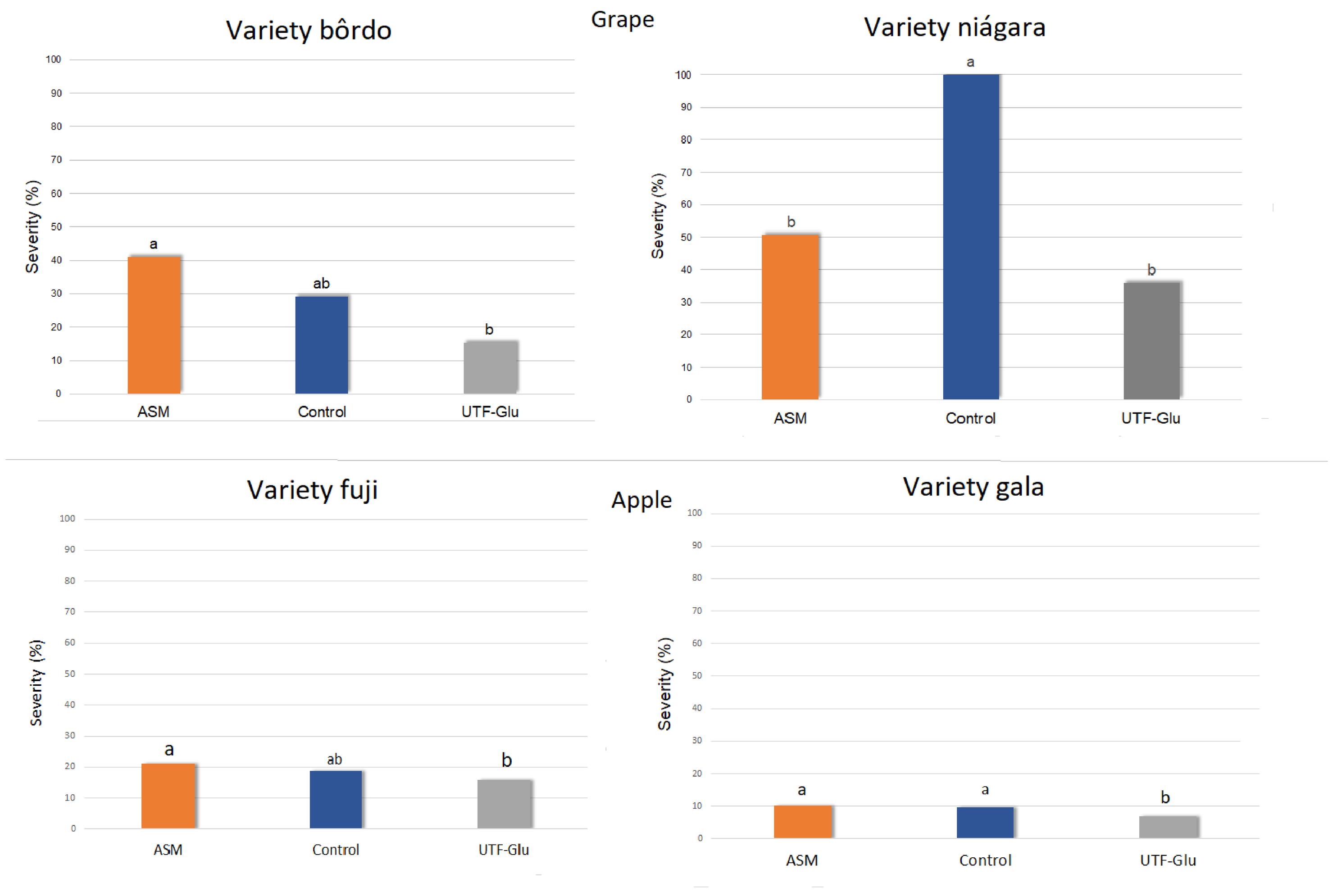

Figure 3. Disease severity in apples (Fuji and Gala) and grapes (burgundy and Niagara). Pato Branco, 2022.

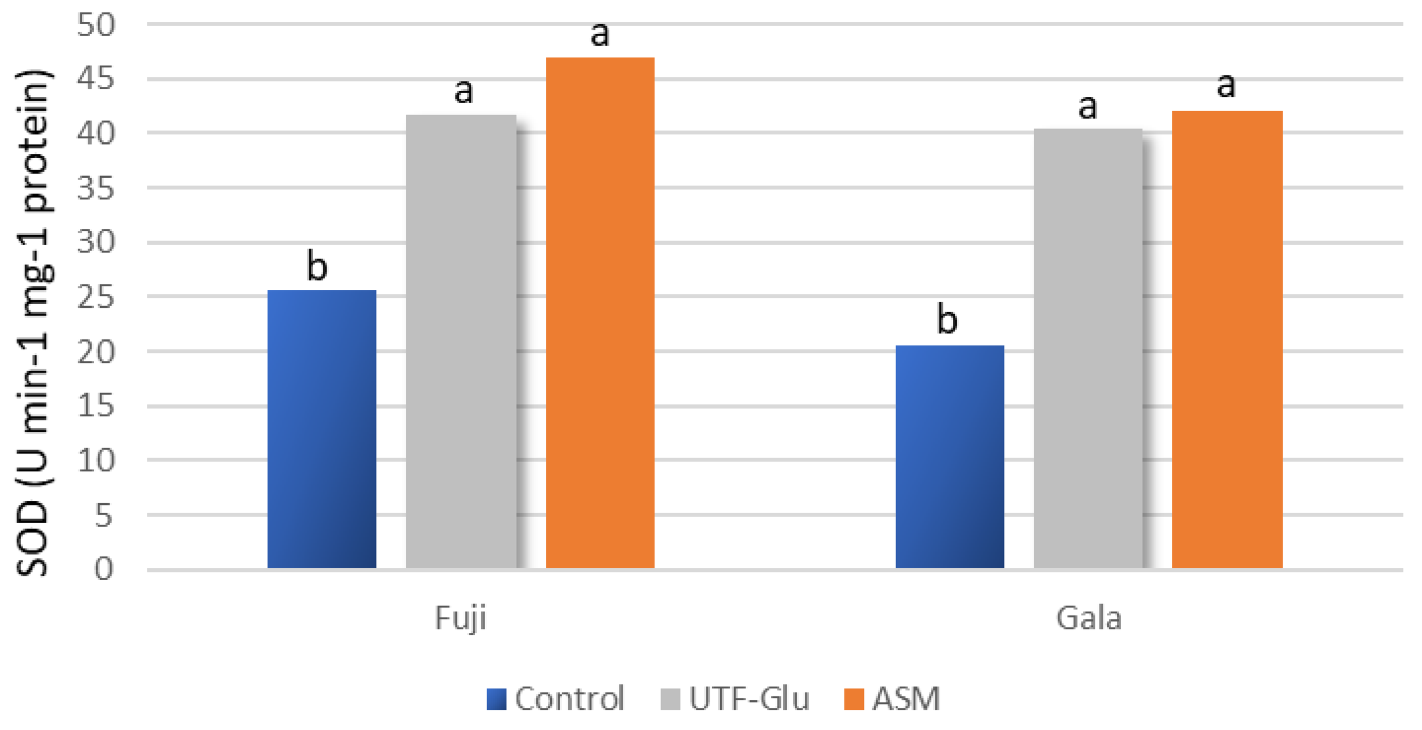

Figure 4. Quantification of SOD enzyme in apple fruits (Fuji and Gala). Pato Branco, 2022.

Considering the experiments carried out in this work, with different fruit species, the results of biometric and biochemical tests using UTF-Glu demonstrate its potential as an elicitor in post-harvest fruits.

ACKNOWLEDGMENT

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