LVII SAIB Meeting - XVI SAMIGE Meeting

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formation and exopolysaccharide (EPS) production were evaluated. Thirty strains were isolated from the swabs, and on the base of phenotypic results, 96.66% of the microorganisms were included in the LAB group. According to the morphology of the strains, 43.33%, 16.66% and 40% were cocci, coccobacilli and bacilli, respectively. All the strains showed a range of auto-aggregation from medium (36.66%) to low (63.33%), and low degrees of hydrophobicity. The biofilm formation of the strains was performed in different culture media: MRS and LAPTg with and without Tween (-T). In general, an increased biofilm formation was observed in media without the surfactant, being the biofilm formed in LAPTg-T higher than in MRS-T. Also, colonies grown on agar medium with different carbohydrate sources were macroscopically observed, and EPS (+) strains were evidenced by their ropy/mucous phenotype. From the evaluated strains 43.33% were EPS (+) in the media with different source of sugars. These results contribute to advance in the characterization of host and tract-specific beneficial LAB strains for their further selection and inclusion in the design of a probiotic product to prevent equine endometritis.

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IN VITRO INHIBITION ASSAY OF COPPER SULPHATE AS FUNGICIDE AGAINST WHITE THREAD BLIGHT FUNGAL ISOLATES

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White thread blight is a disease caused by a fungal complex that causes drying of leaves, stems and branches in Yerba mate and tea plants and causes serious losses in the yield of these crops. Conventional synthetic fungicides are largely considered as the most effective and cost-efficient means for disease management. One of the most used broad-spectrum fungicides for the control of foliar diseases is copper sulphate pentahydrate. Sensitivity of the pathogens to copper varies greatly, depending on the product and the fungus. However, to date, no published studies are available on the inhibition/tolerance to copper sulphate concentrations of the white thread blight fungal isolates. This research investigated the grow inhibition of seven isolates (ACK2, AFE1, ASD4, AKD2, ACJ2, ACB1 and APC1) associated with white thread blight disease by the poisoned food method. Czapek agar medium was supplemented with copper sulphate pentahydrate ($CuSO_4.5H_2O$) at concentrations of 100ppm, 500ppm, 1000ppm and 5000ppm. Twenty milliliters of each sterile medium were dispensed into Petri dishes and inoculated with a 5mm disc cut from the periphery of a 7 days-old culture. Each isolate was inoculated onto two plates and incubated at 28°C. Mycelial growth of the isolates was determined by linear measurements of colony diameters with an electronic caliper at four intervals. To determine fungicide or fungistatic effect the discs which concentrations that completely inhibited growth were inoculated in Potato Dextrose Agar (PDA) medium. Three isolates (AKD2, ACB1, AFE1) showed a maximum inhibition of mycelial growth at 500ppm. Additionally, two isolates (ACK2, ACJ2) were inhibited at a concentration of 1000 ppm. Maximum effect of inhibition of growth was observed at the highest concentration at 5000 ppm. In fungicide/fungistatic assay we verified that at 1000 ppm copper sulphate acts as a fungistatic, inhibiting the development of the fungus but without causing its total elimination. These results suggest that white thread blight pathogens are sensitive to copper sulphate-based fungicides.

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MANNITOL PRODUCTION BY FRUIT-ORIGIN *Fructobacillus* STRAINS USING A FRUCTOSE-RICH SYRUP-BASED MEDIUM

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Mannitol is a low-calorie sweetener used in the food and pharmaceutical industries. *Fructobacillus* species reduce fructose to mannitol thanks to their fructophilic metabolism. In this work, we aimed to study mannitol production by fruit-origin *F. tropaeoli* CRL2034 and *Fructobacillus* sp. CRL2054, using a minimized culture medium (FYP-based) containing fructose-rich syrup as carbon source under optimized culture conditions. Fermentations with a 2-L bioreactor were performed at pH 5.0 and 30 °C under stirring conditions (130 or 200 rpm for CRL2054 or CRL2034, respectively) for 24 h. Two different total saccharide contents (10 and 20%, m/v) were assessed for each strain. Mannitol yield (mannitol production/consumed fructose) was close to 100 % for both strains using a sugar concentration of 10 %; however, higher mannitol concentrations were achieved when 20 % sugar was used (77-79 g/L compared to 47-51 g/L with 10 % carbohydrates). Mannitol crystals were isolated from 24-h fermentation culture supernatants using 20 % sugar. For both producer strains, the physicochemical properties of the mannitol crystals were highly similar to those of high purity commercial mannitol. These results showed that fermentations of fructose-rich syrup-based medium by selected *Fructobacillus* strains at constant pH are an interesting alternative for mannitol production.

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PARTIAL CHARACTERIZATION OF BIOSURFACTANTANTS PRODUCED BY HYDROCARBON-DEGRADING PSEUDOMONAS