Sociedad Argentina de Microbiología General

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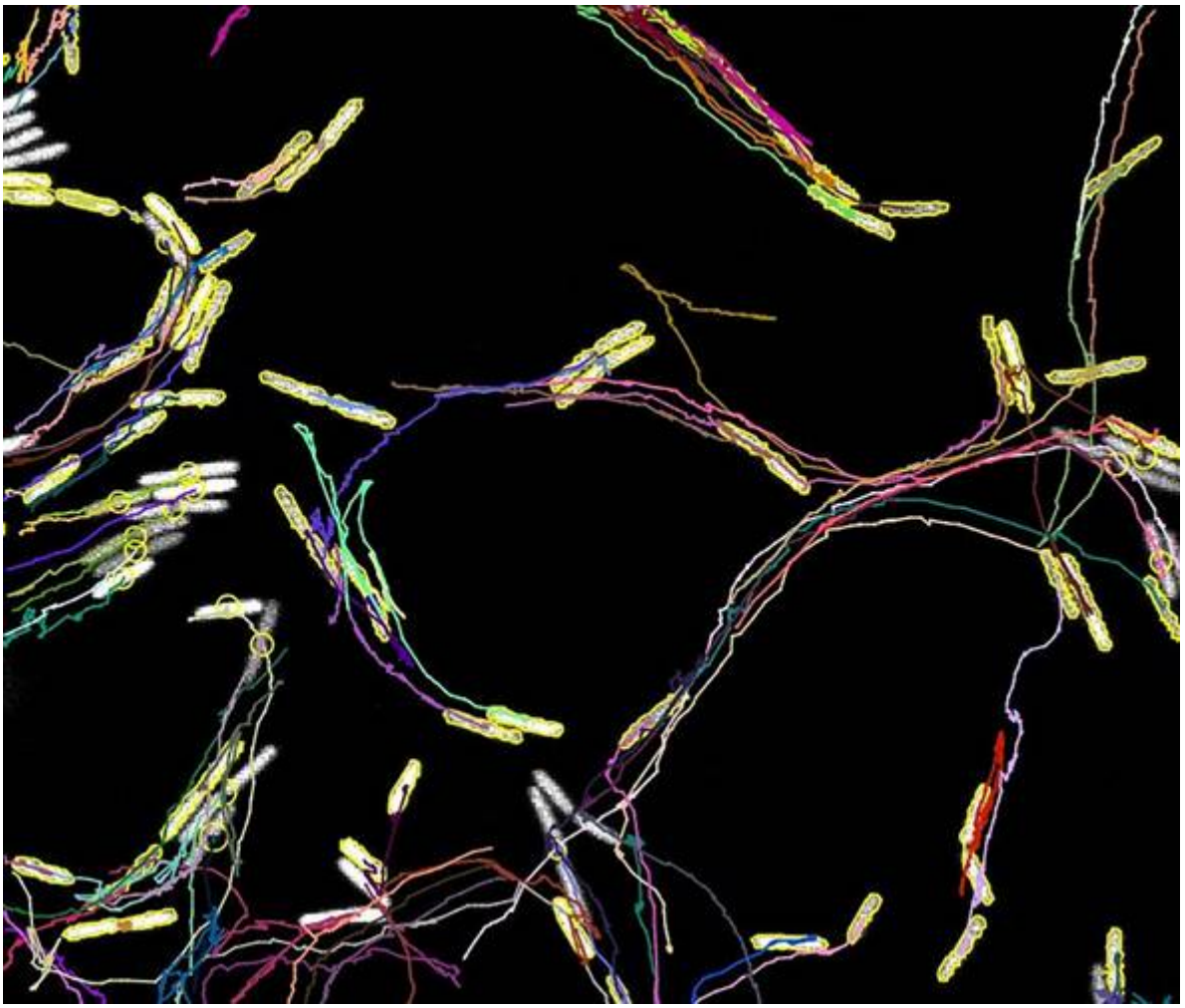

Foto: Se hace camino al andar. Celeste Dea. 1er puesto. Concurso fotográfico SAMIGE 20 años.

SEARCH FOR VIRULENCE FACTORS IN BACTERIA ISOLATED FROM DAIRY FARM SOILS

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In dairy farm soils, pathogenic bacteria play a crucial role in animal health, contributing to the occurrence of intramammary infections such as bovine mastitis. These infections impact both the production and quality of milk and are linked to the ability of bacteria to adhere to host cells, invade tissues, produce toxins, and resist host defenses. This study evaluated various virulence factors, including biofilm production, gelatinases, hemolysins, lecithinases, and DNases, in strains isolated from dairy farm soils in Córdoba. Soil samples were collected from different plots within the farms, microorganisms were isolated and identified through Gram staining and biochemical tests such as catalase, coagulase, and sugar utilization. Subsequently, virulence factors were assessed: biofilm production was analyzed in microtiter plates; gelatinase activity in gelatin medium; hemolytic capacity in blood agar; lecithinase production in egg yolk agar; and DNase activity in DNase Test medium with toluidine blue. The results showed that all isolates could produce biofilm, while 84% exhibited gelatinase production with no significant differences between samples. Regarding hemolysis, 28% of the isolates produced alpha hemolysis, 39% beta hemolysis, and 33% showed no hemolytic capacity. Additionally, 41% of the isolates produced lecithinase and 28% DNase. Most microorganisms exhibiting hemolytic activity, lecithinase, and DNase production were isolated from soils with a high incidence of mastitis caused by contagious pathogens. These findings suggest that the presence of bacteria carrying virulence genes in dairy farm soils could significantly contribute to the incidence of bovine mastitis by facilitating the invasion and colonization of mammary tissue and resisting host defenses, underscoring the importance of better understanding the soil microbiota and its relationship with these infections.

Palabras clave: Virulence Factors- Bacteria -Dairy Farm Soils - Pathogenicity