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Genetic variation of *Staphylococcus aureus* causing mastitis in dairy cows in Jalisco, Mexico.

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**Abstract:**

The genetic variability of *S. aureus* strains isolated from some cases of bovine mastitis was determined. 335 cows from 27 stables were sampled in 10 municipalities in the state of Jalisco. *S. aureus* strains were identified from milk samples of each mammary gland of each cow, which were grown in blood agar and based on the characteristics of the culture, biochemical tests, and finally their molecular confirmation by PCR. The genetic variation in the strains was identified by pulsed- field electrophoresis technique. The images of the gels were analyzed using the Bionumerics® software. 2.26% of clinical mastitis and 40.45% of subclinical mastitis were diagnosed with the California test. A frequency of appearance of *S. aureus* of 9.8% of the total sampled glands was recorded. A genetic variation of 14.9% was observed. The 32 strains analyzed were grouped into pulsotypes with 95% or more of genetic similarity, resulting in 12 pulsotypes. It is concluded that there is great diversity in the genetic variability of *S. aureus* strains from different stables in the state of Jalisco and a great genetic similarity of strains within each stable.

**Keywords:** PFGE, *S. aureus*, typification, frequency of mastitis, genetic variation, pulsed field electrophoresis.