

用高电压脉冲电场促进牛骨可溶性钙快速溶出

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**摘要** 以柠檬酸和苹果酸的复合物作为混合酸, 采用高电压脉冲电场 (PEF) 技术对牛骨中钙盐的溶出进行了研究。结果表明: 该技术与传统方法相比, 具有溶钙量高, 速度快的特点。建立了场强、脉冲数、加酸量对溶出可溶性钙影响的数学模型, 确定了最佳工艺参数: 电场强度23 kV/cm, 脉冲数12, 混合酸量3.881 g, 该条件下溶出的钙离子含量高达12.90 mg/mL。

**关键词** [食品加工技术](#) [高电压脉冲电场\(PEF\)](#) [牛骨](#) [溶出](#) [可溶性钙](#)

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Fast dissolution of dissoluble calcium from bovine bone treated by high intensity pulsed electric fields

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**Abstract** Fast dissolution of dissoluble calcium from bovine bone treated by high intensity pulsed electric fields (PEF) was investigated, in which the admixture of citric acid and malic acid was used as the mixed acid. Results show that the PEF dissolution speed is much faster and the obtained content of dissoluble calcium is much more than that of the traditional methods. The mathematical model of the effects of field strength, pulse number and mixed acid on the dissolution content of calcium was established. The optimum condition was determined as: field strength of 23 kV/cm, pulse number of 12 and mixed acid of 3.881 g. Under such condition the maximal obtained content of dissoluble calcium is 12.90 mg/mL.

**Key words** [food processing technology](#) [high intensity pulsed electric fields \(PEF\)](#) [bovine bone](#) [dissolution](#) [dissoluble calcium](#)

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