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A review of pectin methylesterase inactivation in citrus juice during pasteurization

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1 **Abstract**

3 *Background*

4 Pectin, naturally found in citrus, plays a key role in the quality of the obtained
5 juices. Pectin methylesterase enzyme (PME) influences the cloud stability,
6 viscosity, color, mouth feeling and flavor of the juices by de-esterification of
7 pectin. Inactivation of PME is introduced as a pasteurization index in citrus juices,
8 due to its higher thermal resistance than the spoilage microorganisms.

9 *Scope and approach*

10 Inactivation of PME using different thermal (conventional, microwave and
11 ohmic heating) and non-thermal (pulsed electric field, high pressure processing
12 and high pressure carbon dioxide) processes is important in juice production. The
13 aim of this study was to review the effect of these processing methods on the PME
14 inactivation in different citrus juices.

15 *Key finding and conclusion*

16 Using non-thermal methods in combination with moderate thermal methods can
17 be more effective in PME inactivation with minimum loss in citrus juice quality.

18
19 **Keywords:** Pectin methylesterase; Citrus juice; Pasteurization; Thermal methods;
20 Non-thermal methods

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