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## SUPPLEMENTARY MATERIAL

**Can the Grana Padano and Parmigiano Reggiano production process guarantee a reduction in pathogenic microorganisms equivalent to the pasteurization process?**

Paolo Bonilauri,<sup>1</sup> Alfonso Rosamilia,<sup>1</sup> Stefano Benedetti,<sup>2</sup> Paolo Daminelli,<sup>1</sup>  
Marina Nadia Losio,<sup>1</sup> Ana Moreno,<sup>1</sup> Matteo Ricchi,<sup>1</sup> Nicola Santini,<sup>3</sup>  
Giorgio Varisco,<sup>1</sup> Silvia Vianello,<sup>1</sup> Giuseppe Merialdi<sup>1</sup>

<sup>1</sup>Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna, Brescia;

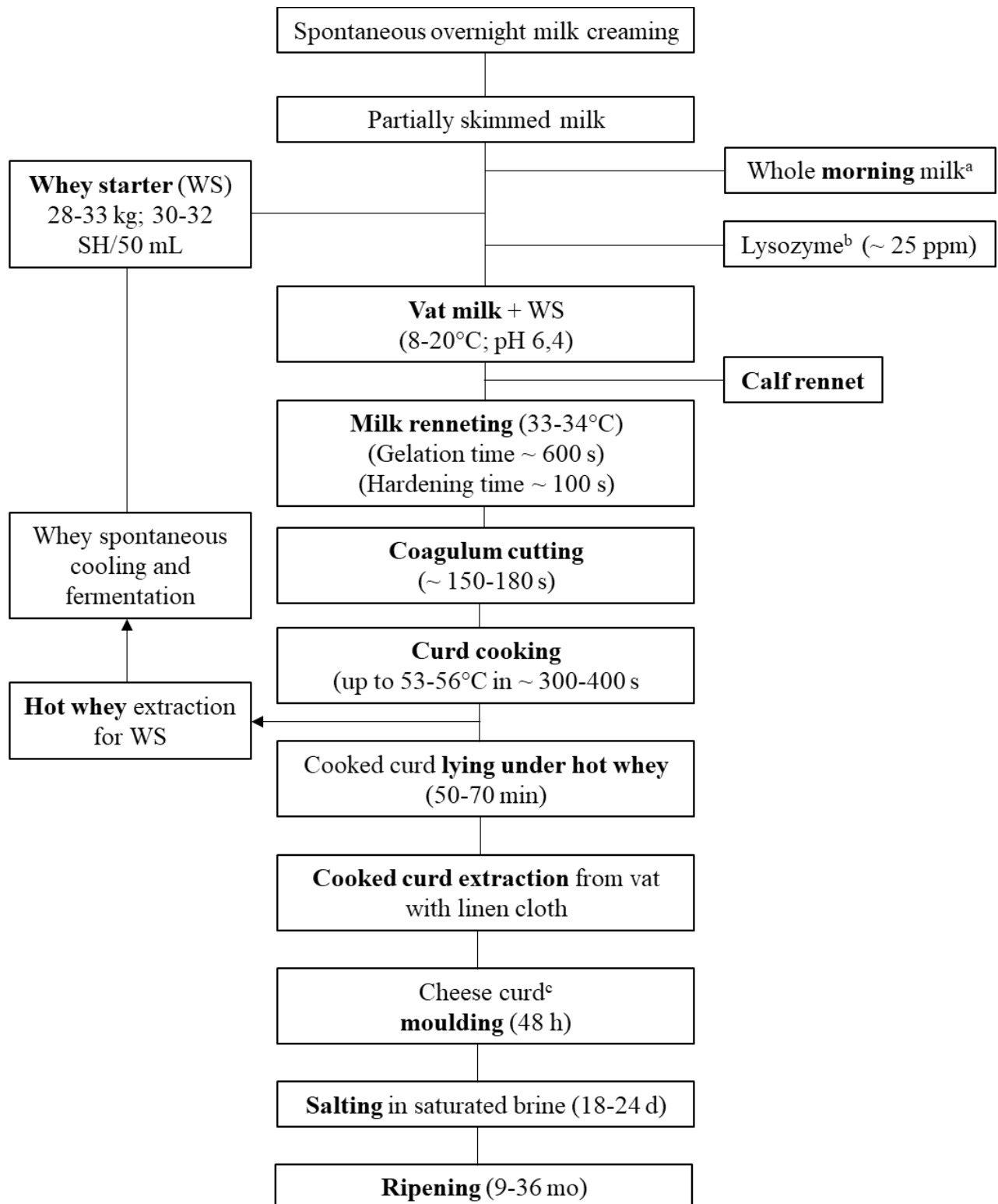
<sup>2</sup>Department of Collective Prevention and Public Health, Region Emilia-Romagna, Bologna;

<sup>3</sup>Ministry of Health, Rome, Italy

**Correspondence:** Alfonso Rosamilia, Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna, Brescia, Italy.

E-mail: [alfonso.rosamilia@izsler.it](mailto:alfonso.rosamilia@izsler.it)

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**Supplementary Figure 1. Flow chart for Parmigiano Reggiano (PR<sup>a</sup>) and Grana Padano (GP<sup>b</sup>) cheese production.**

<sup>c</sup>The core of the curd after extraction stay above 50°C for up to 10 h or more (Giraffa *et al.*, 1998; Neviani *et al.*, 1995; Pellegrino *et al.*, 1997).

**Supplementary Table 1. Risk mitigation treatments for milk from areas subject to foot-and-mouth disease (FMD), Rift Valley fever (RVF), and lumpy skin disease (LSD) restrictions. Reproduced from: European Commission, 2020 (Annex VII, Delegated Regulation EU 2020/687).**

Treatment <sup>a</sup>	FMD	RVF	LSD
Heat treatment (sterilization process) to achieve a minimum F <sub>0</sub> value of 3	x		
Heat treatment UHT: minimum 132 °C for a minimum of 1 second	x		
Heat treatment UHT: minimum 135 °C for a suitable holding time	x		
Heat treatment HTST if milk pH is lower than 7, minimum 72 °C for a minimum of 15 seconds	x		
Heat treatment HTST if milk pH is 7 or higher, minimum 72 °C for a minimum of 15 seconds, applied twice	x		
Heat treatment HTST combined with a physical treatment to achieve pH value below 6 for a minimum of 1 hour or to achieve a minimum of 72 °C, combined with desiccation	x		
Pasteurisation consisting in a single heat treatment with an effect at least equivalent to that achieved by applying 72 °C for 15 seconds	x	x	x

<sup>a</sup> F<sub>0</sub> is the calculated killing effect on bacterial spores. An F<sub>0</sub> value of 3 means that the coldest point in the product has been heated sufficiently to achieve the same killing effect as 121 °C (250 °F) in three minutes with instantaneous heating and chilling; Ultra high temperature; High temperature short time pasteurisation.