

Public release date: 29-Jan-2010

Contact: SINC

[info@plataformasinc.es](mailto:info@plataformasinc.es)

34-914-251-820

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## Study recommends better handling of milk in restaurants

One-third of samples of milk and dairy products analysed in various restaurants exceed the microbe contamination limits set by the European Union, according to a study carried out by researchers from the University of Valencia (UV). The experts advise against keeping milk in jugs and suggest that these foodstuffs need to be better handled.

"Out of all the dairy products we analysed, 35% of the samples exceeded the maximum contamination levels established by EU law for enterobacteriaceae, and 31% exceeded the limits set for mesophilic aerobic microorganisms (which grow at an optimum temperature of between 30 and 45°C)", Isabel Sospedra, a researcher at the Department of Preventive Medicine and Public Health of the UV and one of the authors of the study, tells SINC.

The scientists examined 265 batches of milk and ready-to-use milk derivatives in a range of bars and restaurants in Valencia, and checked whether their microbial quality fell into line with European Union regulations. The results, which have been published recently in the journal *Foodborne Pathogens and Disease*, show that one-third of the samples had some kind of microorganism contamination and were not fit for human consumption.

"Luckily none of the batches we analysed tested positive for *Staphylococcus aureus*, *Listeria monocytogenes* or *Salmonella spp.*, which are pathogenic microorganisms that cause both food poisoning and toxoinfections", the study's authors says.



 IMAGE: A study recommends better handling of milk in restaurants.

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The researchers found differences according to the source of the sample (hot milk, products at room temperature or homemade dairy products). According to the study, 2% of the samples of hot milk (kept in jugs or stainless steel thermos flasks) tested positive for the bacteria *Escherichia coli*.

The team detected unsuitable practices, such as reheating milk over and over again, even in a microwave, and then pouring it back into the thermos, which increases the risk of microbial contamination. The study shows that there is a greater contamination risk from milk kept in jugs, meaning this type of container is not suitable for storing milk.

Focus more on cleaning utensils

The experts advise that, when using milk in any way, it is important to clean jugs, thermos flasks and the steamers of coffee machines thoroughly and frequently, using the right kind of hygienic sponges or cloths, which is not always the case. "Kitchen cloths are not suitable for disinfecting because of their microstructure, which means they transfer even greater levels of contamination", the scientists explain.

In terms of milk that is cold or at room temperature, this is usually kept in its original container in restaurants and bars – a plastic bottle or tetrabrick. The study shows that containers with a lid are better, since tetrabricks opened with scissors are more exposed to microbial proliferation, and are especially vulnerable to enterobacteriaceae.

In terms of dairy products prepared in the restaurants themselves (custards, mousses, puddings and crème caramels), custards (natillas) had the highest levels of contamination with microorganisms. This may be due to the fact this was the only foodstuff analysed that is further processed after being heated, say the scientists. Cross contamination could come from the hands of the person preparing the product, particularly when he or she places the biscuit on top of the dish.

In line with previous studies, the researchers also showed that adding cinnamon to dairy products led to reduced microorganism contamination, since this substance helps to eliminate microorganisms such as *Escherichia coli*, *Listeria monocytogenes* and bacteria from the *Salmonella* family.

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References:

Isabel Sospedra, Josep V. Rubert, Carla Soler, Jose M. Soriano, Jordi Mañes. "Microbial Contamination of Milk and Dairy Products from Restaurants in Spain". *Foodborne Pathogens and Disease* 6(10): 1269-1272, diciembre de 2009.

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