

Arsenic in rice milk exceeds EU and US drinking water standards

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Commercial rice milk contains levels of arsenic – a chronic human carcinogen – up to three times higher than EU and US drinking water standards, say researchers in the Royal Society of Chemistry's *Journal of Environmental Monitoring*.

Rice milk is made commercially as an alternative to animal-derived milk such as cows' milk. It is aimed those who are lactose intolerant, are on a macrobiotic diet or are vegetarian/vegan. It lacks the proteins, vitamins and minerals that cows' milk provides, so commercial rice milk is often fortified with these additives.

The researchers from the University of Aberdeen, UK, bought different brands and varieties of rice milk, including organic, non-organic and flavoured, from local supermarkets. They also made 'home-made' rice milk, from rice grown in different parts of the world, with a commercially-available machine.

They showed that of four brands of commercial rice milk tested, all exceeded the EU total arsenic standard of $10 \mu\text{g l}^{-1}$ – some by as much as three times. Eighty per cent of samples also failed to meet the US standard of $10 \mu\text{g l}^{-1}$ inorganic arsenic.

Of the samples of 'home-made' rice milk made by the researchers, all met US standards and only one failed to meet EU standards.

It is questionable, the researchers say, if rice milk counts as a water substitute – where it would be regulated by these directives – or as a food. But they believe that in this case the distinction between the two should not be made. "Whether rice milk is a food or a drink is a moot point," the researchers say in the paper. "...if rice milk is a dietary constituent on a regular basis, then chronic arsenic exposure, at levels deemed unsafe under the EU water drinking directive, will occur."

The authors also note that currently no maximum permissible concentration (MPC) for arsenic in food has been set by the Commission of European Communities – meaning arsenic levels in food are effectively unregulated in Europe and elsewhere. "Given that arsenic in its inorganic form ... is a chronic human carcinogen, it is surprising that MPCs have not been set for this element," they say.

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Source: University of Aberdeen

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