

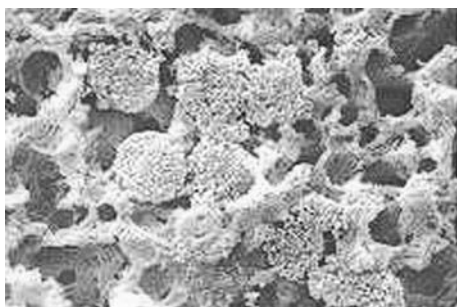
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Perfect pizza

Pizza is a high fat food, mostly because of the cheese—the Italian cheese, mozzarella, tastes good and melts to a gooey, stringy state. Scientists have tried to make cheese which contains no fat but behaves like the real thing... so we can enjoy the perfect pizza without getting fat. Read this story of the scientists' work and see if they got it 'pizza perfect'.

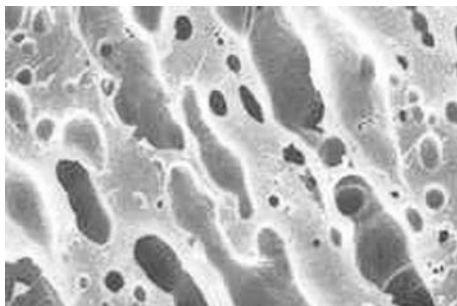
Melting mozzarella and the pizza problem

Mozzarella cheese has a rich texture and melts to make the perfect high fat pizza. Food scientists have been trying to make a perfect pizza which tastes just like it was made with mozzarella - but with less fat. Low fat cheese is made by taking out the normal fat and adding egg white or soy protein instead. Cheeses made this way have one-third of the fat, but do not melt very well. Also, they burn easily and have a grainy texture.



Low fat cheese showing globules of added protein
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Scientists have studied how pizza cheese melts. They found that when mozzarella melts, oils come to the surface, making a liquid coating. This makes pieces of cheese melt together into a gooey mass.



Mozzarella under the microscope
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Low fat cheeses have less oils, so the surface is dry and will form a hard skin. This stops the cheese from melting in the classic pizza style.

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Perfect pizza

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The scientists realised that they could spray a coating of oils on to the low fat cheese. On these test pizzas, the low fat cheese melted exactly like the real thing. The results showed that making the perfect pizza depends on having fat molecules on the surface. Using the spray means adding a tiny amount of extra fat to the pizza, but the improved look and cheese melting effects make this worthwhile. But does it taste like the real thing?

Questions

1. Why did scientists want to make a low-fat pizza?

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2. What is added and taken away to make a low fat cheese?

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3. What is the problem with low fat cheeses when it comes to making pizza?

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4. How did scientists solve the problem?

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5. What other experiments should scientists do before saying they know how to make the perfect pizza?

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Perfect pizza

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Investigations

1. Compare the fat contents of mozzarella and other 'pizza' cheeses in the supermarket. Test the melting points of these cheeses and their tastes. Does mozzarella melt and taste 'the best'?
2. Test how a 'low fat' cheese melts - and find out if the melting does change when a cooking spray of oil is used.

