

Europe's fusion-reactor plans depend on JET

Closing the Joint European Torus may save some money, but at a great cost to physics.

Sir — In your News story “Fusion cash shortfall leaves JET grounded” (*Nature* **424**, 4; 2003), you cite Alexander Bradshaw’s view that the “sensible” option for the European Union (EU) fusion programme is to close the Joint European Torus (JET), implying that it is a luxury, low-priority item.

This could not be further from the truth. JET is the most relevant device to ITER, the planned international magnetic fusion reactor, for addressing questions of how scenarios, performance limits, heat loads and stresses extrapolate with device size. As a scientist working on JET, I must point out that it is also developing key techniques that would otherwise have to await much more expensive research programmes in ITER. Examples include the development of tritium and remote-handling technologies, ion cyclotron and lower hybrid resonant

heating techniques, D–T fusion capability and exploration of effects of ‘fast’ particles (which can only be confined in a large device such as JET) in heating and changing the stability of the plasma. Thus JET is exploring the ‘new’ physics of ITER, and developing techniques and understanding to speed ITER’s research programme.

In recent years JET has been redeveloped as a model of European collaboration, enabling even small scientific associations to have leading roles in key fields for ITER. Without a centrally funded EU facility, the EU fusion programme would have no coherence. We should be following the example of particle physics, pooling resources at every level in the operation of major shared facilities that most directly address the development of the field.

Closing JET may seem the easy option,

giving each country the security of having its own individual programme. A far more sensible, though challenging, option is for directors to make the case for increased fusion funding, a restructured and more centralized European programme, and to centre national resources and programmes on a few pan-European facilities.

JET remains at the forefront of the world fusion programme. With the many upgrades and new systems coming online over the next 18 months, and the vigour injected by its collaborative framework, it has one of the most diverse, dynamic and intensive ITER-relevant programmes in the world. It should be the last part of the EU programme to be closed down.

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Consumers don't want GM, so why use it?

Sir — The organic movement will be grateful for *Nature*’s interest in our well-being (“Diversity in food technology”, *Nature* **424**, 473; 2003), but when you urge us to abandon “self-damaging dogmas”, I hope you’ll forgive us for looking at your advice a little sceptically.

You are advising one of the few sectors of UK agriculture that has a real and growing market, strongly supported by consumers, to introduce a radical change in our product. We see no evidence, however, that using genetically modified (GM) crops would further the interests of organic farmers, organic food manufacturers, organic retailers or the millions of people who eat organic food in the United Kingdom.

In your Editorial you say that the Soil Association “will resist seemingly to their dying breath” the idea that GM could be as ethical as conventional plant breeding. Ultimately the decision is up to consumers. Given that people who buy non-organic food have said they don’t want GM in it, it’s hardly surprising that organic consumers are even more determined that GM should be kept out of organic food.

The significant areas of uncertainty described in the UK government’s scientific assessment of GM crops suggest that these consumers know what they’re talking about. You say that our determination to keep GM out of organic is “arbitrary and self-defeating”. Was it “arbitrary and self-defeating” when the organic sector banned the feeding of ground-up animal remains to ruminants ten years before the discovery

of BSE? This was done in the absence of any scientific evidence and solely on the basis of what you call dogma.

Thankfully the UK government has learned some lessons from past food disasters. In particular, it seems willing to listen to the market and consumers in a way that the overwhelmingly pro-GM scientific establishment in the United Kingdom finds completely impossible.

The UK government has promised to protect organic farming from GM contamination, in line with consumers’ wishes (and incidentally with the European Union regulation defining organic production). As you say, there is increasing recognition of what organic farmers and environmentalists have been saying for nearly a decade: namely that coexistence of GM and organic farming may not be possible in the United Kingdom. We shall have to make a choice.

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Open-source answer to bibliography problem

Sir — David M. Leslie and Meredith J. Hamilton say in their Correspondence “Multitude of reference styles delays publication” (*Nature* **424**, 127; 2003) that a standard format is needed for citation and bibliography styles. The well-established LaTeX family of open-source packages is such a system. Many journals in the physical and mathematical sciences provide

their bibliographic style files directly on their websites, reducing the problem of format management. Life-sciences journals could easily follow their example.

Leslie and Hamilton repeat a familiar objection to LaTeX: the learning curve takes away time from research work. This problem has largely been solved in the form of an open-source graphical interface to LaTeX called LyX (www.lyx.org), providing standard functionality such as cut/paste and spell-checking. New users are relieved of the time investment necessary for using LaTeX alone, yet they still derive its well-known performance benefits. The LyX interface handles standard file formats, most significantly Adobe PDF, which many journals require for electronic submission. It is therefore compatible with other tools used by authors to view, share and submit their written work.

Leslie and Hamilton discuss one standardization tool, the digital object identifier (DOI). But although there is substantial incentive for publishers to adopt DOI for increased visibility and accessibility, the benefits of simply changing long-established reference and citation styles are unclear. LaTeX/LyX may represent a more realistic solution. We hope investigators will also consider such open-source applications in the broader context of conducting their scientific work as suggested in your Editorial “In praise of open software” (*Nature* **403**, 229; 2000; doi:10.1038/35002141).

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