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Organic farming 'no better for the environment'

Organic food may be no better for the environment than conventional produce and in some cases is contributing more to global warming than intensive agriculture, according to a government report.

The first comprehensive study of the environmental impact of food production found there was "insufficient evidence" to say organic produce has fewer ecological side-effects than other farming methods.

The 200-page document will reignite the debate surrounding Britain's £1.6bn organic food industry which experienced a 30 per cent growth in sales last year.

David Miliband, the Environment Secretary, drew a furious response from growers last month when he suggested organic food was a "lifestyle choice" with no conclusive evidence it was nutritionally superior.

Sir David King, the Government's chief scientist, also told The Independent he agreed that organic food was no safer than chemically-treated food.

The report for the Department for Environment, Food and Rural Affairs found "many" organic products had lower ecological impacts than conventional methods using fertilisers and pesticides. But academics at the Manchester Business School (MBS), who conducted the study, said that was counterbalanced by other organic foods - such as milk, tomatoes and chicken - which are significantly less energy efficient and can be more polluting than intensively-farmed equivalents.

Ken Green, professor of environmental management at MBS, who co-wrote the report, said: "You cannot say that all organic food is better for the environment than all food grown conventionally. If you look carefully at the amount of energy required to produce these foods you get a complicated picture. In some cases, the carbon footprint for organics is larger."

The study did not take into account factors such as the increased biodiversity created by organic farming or the improved landscape.

The report said: "There is certainly insufficient evidence available to state that organic agriculture overall would have less of an environmental impact than conventional agriculture.

"In particular, organic agriculture poses its own environmental problems in the production of some foods, either in terms of nutrient release to water or in terms of climate change burdens."

Using data from previous studies, the researchers singled out milk as a particular example of the environmental challenges presented by organic farming. Organic milk requires 80 per cent more land and creates almost double the amount of substances that could lead to acidic soil and "eutrophication" - the pollution of water courses with excess nutrients.

The study found that producing organic milk, which has higher levels of nutrients and lower levels of pesticides, also generates more carbon dioxide than conventional methods - 1.23kg per litre compared to 1.06kg per litre. It concluded: "Organic milk production appears to require less energy input but much more land than conventional production. While eliminating pesticide use, it also gives rise to higher emissions of greenhouse gases and eutrophying substances."

Similar findings were recorded with organic chickens, where the longer growing time means it has a higher impact on all levels, including producing nearly double the amount of potentially polluting by-products and consuming 25 per cent more energy.

Vegetable production was also highlighted as a source of increased use of resources. Organic vine tomatoes require almost 10 times the amount of land needed for conventional tomatoes and nearly double the amount of energy.

Advocates of organic farming said its environmental benefits had long been established, not least by Mr Miliband who has written it is "better for biodiversity than intensive farming". The Soil Association said it recognised that in some areas, such as poultry and growing vegetables out of season, organic was less energy efficient.

But it said that was vastly outweighed by factors which the Defra study had not taken into consideration such as animal welfare, soil condition and water use.

The pitfalls

Tomatoes

- * 122sq m of land is needed to produce a tonne of organic vine tomatoes. The figure for conventionally-grown loose tomatoes is 19sq m.

- * Energy needed to grow organic tomatoes is 1.9 times that of conventional methods.

- * Organic tomatoes grown in heated greenhouses in Britain generate one hundred times the amount of CO₂ per kilogram produced by tomatoes in unheated greenhouses in southern Spain.

Milk

- * Requires 80 per cent more land to produce per unit than conventional milk.

- * Produces nearly 20 per cent more carbon dioxide and almost double the amount of other by-products that can lead to acidification of soil and pollution of water courses.

Chickens

- * Organic birds require 25 per cent more energy to rear and grow than conventional methods.

- * The amount of CO₂ generated per bird is 6.7kg for organic compared to 4.6kg for conventional battery or barn hens.

- * Eutrophication, the potential for nutrient-rich by-products to pollute water courses, is measured at 86 for organic compared to 49 for conventional.

- * The depletion of natural resources is measured at 99 for organic birds compared to 29 for battery or barn hens.