

# This little piggy fell ill...

**FOCUS** With more and more pigs being raised intensively to satisfy Europe's lust for cheap pork, epidemics are inevitable. And the hogs may not be the only ones to get sick

THE southern Netherlands must be the closest place on Earth to hog heaven—for the pig farmers, if not the pigs. The country is home to 14 million swine, most housed in concrete barns as huge as hangars. With up to 9000 animals per square kilometre, the southern Dutch provinces, along with parts of neighbouring Belgium and Germany, boast the densest pig population in the world.

But a blight has hit hog heaven. In Europe's third major outbreak since 1990, classical swine fever (CSF) swept the Dutch pig belt last year. Nearly six million pigs died—most of them killed not by the virus, but by the farmers themselves. The farmers had no choice: in an effort to halt the spread of the disease, the government banned the movement of any animals that lived near an outbreak, offering compensation for animals that couldn't be sold.

The epidemic cost the Netherlands £400 million. Three years earlier, Germany had to fork out over £600 million when CSF hit its dense pig region. And CSF is now raging in the pig country of northern Spain.

CSF is not Europe's only animal plague. Of the 15 serious diseases that must be reported to world monitoring authorities, nine have broken out since 1984. Six were major epidemics. New diseases are also appearing. The increased trade in meat and

animals spreads viruses around more, and once infections reach Europe's crowded barns, the density of the animals makes the diseases uncontrollable. "This concentration of production is giving rise to an increasing risk of disease epidemics," warns Fernando Mansito, assistant head of the European Commission's agricultural directorate.

## From hog to human

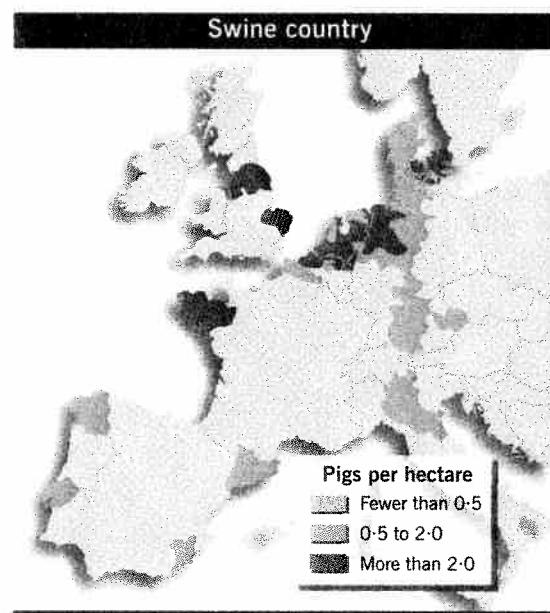
While most outbreaks have posed little threat to humans, fears are growing that Europe's crowded barns might be a breeding ground for human as well as animal disease. Influenza is a particular worry because there is now evidence that pigs can breed new strains of it (see page 14). "Influenza [in pigs] is closely correlated with pig density," says Hans-Wilhelm Windhorst, a geographer at the University of Vechta in Germany's pig belt, who is part of a study of pig farming funded by the European Commission. Martin Ganter of the School of Veterinary Medicine in Hanover thinks the next lethal flu pandemic in humans might emerge from Europe's crowded pig barns.

Chickens, cattle and even rabbits have all been struck by recent epidemics, but on the Continent, pigs have been hardest hit. It's no surprise: Europe's pig industry is a recipe for disaster. To cut production

"In these high-density areas, infections which are not traditionally airborne can fly from farm to nearby farm," says Martin Hugh-Jones, a veterinary epidemiologist at Louisiana State University in Baton Rouge. Foot-and-mouth disease, a virus which does spread long distances in humid air, poses an even bigger danger. It could unleash "a horror scenario" in Europe's hyperdense pig regions, he warns. The infection could spread rapidly, and with sick pigs sneezing out vast amounts of the virus, he says, foot-and-mouth disease could reach virtually anywhere in Europe where the wet wind blows. "There isn't enough vaccine to stop it," he says. "And how do you dispose of that many dead pigs?"

But not everyone is convinced that density is at the root of the problem. "The swine industry [in the US] has not had an unusually high body count during its rapid growth phase in the past 15 years," says Peter Cowen of North Carolina State University at Raleigh. Veterinary care and hygiene—sterilising swill, for instance, and periodically disinfecting barns—have been stepped up to deal with the growing risk of disease. Thomas Blaha, an epidemiologist at the University of Minnesota in St Paul, who worked on the CSF outbreak in Germany, says that while the risk of epidemics may be heightened by high density,

'Fears are growing that Europe's crowded barns might be a breeding ground for human disease'



costs, pigs are born on one farm, weaned on another and fattened on yet another. In these specialised farms, thousands of animals from different places are crammed together.

In the US, such mega-units have to be surrounded by a 30-kilometre pig-free zone to curb the spread of disease, but no such safety zone is required in Europe. This provides ideal conditions for explosive outbreaks of disease, says Gareth Davies, formerly of the European Commission's veterinary office in Brussels. When animals are kept at such high densities, traditional measures such as herd slaughter and bans on animal transport are unable to prevent contagion, says Davies.

stringent hygiene should prevent them. "Noncompliance with basic prevention and hygiene rules, and uncontrolled animal movement, pose a much higher risk than high animal density," he says.

But Windhorst doubts that hygiene alone is enough to prevent outbreaks. He doesn't think it's possible to manage high-density pigs without occasional disasters. "Only with increased veterinary surveillance can a potential time bomb be kept under control," says Cowen. Yet, rather than being extended, surveillance is falling. The privatisation and decentralisation of European veterinary services have resulted in such bad communications and loss of staff, says Davies, that a recent foot-and-mouth disease epidemic spread for three months before it was recognised.

The Dutch are in no doubt: they want fewer pigs. New laws, which take effect this month, aim to cut the number of pigs

## Web of misery

● This column could be bad for your health—if you're reading it online. A two-year study by researchers at Carnegie Mellon University in Pittsburgh has concluded that surfing the Internet can cause a slow decline in mental health. Social psychologist Robert Kraut says Internet use results in isolation, loneliness and depression—details at <http://whatsnew.andrew.cmu.edu/Computers/Information.qry?record=33011>.

● Although the Net users in the study "talked" in chat rooms, exchanged e-mails and kept in touch electronically, they spent less time talking to friends and family, and suffered from the effects of lowered social involvement. Netropolitan recalls that similar things were said about computer gamers in the 1980s.

● But never fear. If you think you are suffering from depression, help is at hand—on the Internet. Depression can be brought on by many things, and the pages at [http://www.geocities.com/~virtualpsych/what\\_causes\\_depression.htm](http://www.geocities.com/~virtualpsych/what_causes_depression.htm) do a good job of summarising the likely contributing factors. For depression tests, try <http://www.mentalhealth.com>. This site tells you how to assess yourself and where to seek help, as well as giving definitions of numerous mental health problems.

● If you're addicted to surfing the Web, the Internet can help here too. The Centre for Online Addiction is based at <http://netaddiction.com>. Here you'll find an Internet addiction test and a virtual clinic for anyone diagnosed as having a problem. But as with all these sites, if you have a serious problem it is no substitute for a visit to a real therapist.

● Your mental health isn't the only thing the Internet threatens. It can also turn people into "mouse potatoes". To see if you need to do more than push a mouse around, go to <http://library.advanced.org/12153>, where you will find advice on health, fitness and how to work out a basic exercise plan.



DPA

## as well as animal disease. Influenza is a particular worry'

per farm, and the total number of pigs in the country, by at least a quarter by 2000. Fattening units will be allowed to take piglets from only three suppliers, to limit the spread of any infection. But pig industries elsewhere have blocked similar efforts. In Germany, density is growing and fatteners can take pigs from up to 30 suppliers.

### Fear of needles

Vaccination might seem the obvious answer, and a vaccine for CSF already exists. But European farmers are not allowed to use it, or most other new animal vaccines, because in the past importers have found vaccinated animals hard to distinguish from infected ones. Another reason the pig industry doesn't want to vaccinate, says Windhorst, is the public fear of genetic engineering. The new vaccines consist of viral proteins made using recombinant DNA. "The head of a major supermarket

chain told me that if the public knows there is bioengineered vaccine in the meat, they won't be able to sell it," he says.

Add to that the fact that farmers have to pay for the vaccine themselves, and vaccination looks increasingly unlikely. However, if the industry, rather than the taxpayer, paid most of the cost of epidemics, things might be different, Davies says. A European Union-wide cost-benefit analysis is presently looking into whether the cost of epidemics is really greater than the cost of preventive measures like vaccines.

Meanwhile, the situation is getting worse. As the costs of pig farming rise in Western Europe, the industry is moving east, where foot-and-mouth disease is common. The biggest pig barns ever seen in Europe are now being built in Eastern Europe. More sick pigs are inevitable—and they could cost taxpayers their lives as well as their money.

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