

# This is one happy cow

No smacking, no prodding, no shouting. Britain's most enlightened farms are revolutionising the way meat is reared. And the reason? Contented cattle make great steaks. Read more from Alex Renton on happy cows and farming.

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The boggy fields around Bill Cassells' bungalow are dotted with great humps of ginger hair, like an invasion of alien fungus. Venture a little closer and you find that these move. Behind curtain-sized fringes are huge brown eyes and above them a spread of horns a good three feet wide. These are Highland cattle and, for all that they look like half a ton of fright wig on legs, they're the epitome of mellow. They wander over to inspect us at Bill's call, and are hardly put out even when Murdo, OFM's photographer, starts planting lighting reflectors and flash guns around them. Anna, the five-year-old matriarch of this 75-strong herd, slouches forward to pose for the picture with all the cool of a catwalk veteran. These are happy cattle, these Highlanders. They live outside on the hills above Scotland's River Spey, eating heather and the moorland grass, supplemented in winter with draff, the malty remains of the grain used in the nearby whisky distilleries. [Article continues](#)

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The cattle grow at a natural pace and, perhaps most importantly of all, they've never been frightened. Bill's farm is quarantined and dogs are not permitted. The herd is small enough for Bill to know each animal - 'If I see a calf being picked on, or bullied, I can separate them. Each one is looked after according to its character.' When the animals are moved there's no shouting, and no prodding. 'A blue water pipe for a smack across their arses is the favourite way of moving animals along,' says Bill. 'But we've banned that. When we move them we do it mostly by talking to them.'

It's all a picture of the traditional and humane, and here on Cassells' smallholding in the sunshine we seem to be a million miles from the world of industrial meat production. But what's the practical purpose? 'Well, they're such good eating,' says Andrew, a neighbour who's helping move the cattle. 'Imagine beef with the flavour of venison.' Cassells boasts: 'The proof of what we do is on the plate. Better flavour, better quality. We guarantee, if you can't eat our steaks with a plastic knife and fork you can have your money back.'

It may seem screamingly obvious that there's a connection between the way you treat an animal and the taste and quality of its meat, but it is a notion that has taken a while to penetrate the cost-driven consciousness of the modern meat industry. 'What's interesting,' says Tom Gatherer of the Scottish Society for the Prevention of Cruelty to Animals, 'is that what would seem commonsense is now being scientifically proven. It's true that the best-raised animals make better meat, and the industry is taking that on board.' Andrew

Lane, one of the founders of Loch Fyne Oysters, and in charge of sourcing meat for the group's shops and restaurants, says simply: 'You can tell the mood of the cow by the taste of the meat.'

Better-tasting meat does not come cheap, however. The abattoir run by Millers of Speyside, to which Cassells' animals go, sells dry-aged fillet steak at £49.95 a kilo through the upmarket Lidgate's butcher in Kensington. Sainsbury's best fillet steak retails at £29.99 a kilo. (Millers sells excellent dry-aged sirloin steaks from its website at £26 a kilo.)

Meat's flavour is dependent on many things - the way the animal was fed, the way it was raised, the fat content of its meat, and the way, after slaughter, the meat was conditioned and matured. But chemical analysis of muscle tissue now shows that a key factor is stress. Excite or frighten an animal - or a human being - and blood, adrenaline and other hormones will rush to muscles, getting them ready for action. This will alter the acid levels in the meat, affecting the colour, the taste and the texture. The technical term for beef that's been damaged by this sort of stress is 'dark cutting meat', because of the distinct colour and texture. One cattle farmer told me: 'It's like eating the sole of your boot.'

Keeping animals unstressed through their lives, and raising them and feeding them in a consistent way, has been shown to affect meat quality. But clearly the most potentially stressful thing for Bill Cassells' cattle, as to any of the millions we eat each year, is the manner of their slaughter. Cassells' Highlanders go to the slaughterhouse at about two-and-a-half years old. He cajoles them into a truck in pairs, and they travel about 15 minutes up the valley of the Spey, to Millers' abattoir at Grantown. If you want to keep animals unstressed this is a good start. They're travelling with familiar companions and the distance is as short as possible. Too often, especially since the large-scale closures of slaughterhouses after the BSE crisis, animals have to travel hours in packed lorries at the end of their lives; sixty per cent of all Scotland's sheep leave the country for slaughter.

Lily Allen is singing to the animals I find waiting to die in the lairage, the holding area, at Millers. They don't seem to object - in fact the groups of sheep and cattle standing in the semi-darkness in straw-filled pens seem pretty relaxed, under the circumstances. There's some shaggy Highland bullocks, one of whom puts his head through the bars to lick my hand. The policy at Millers is to keep animals in their family groups, again, another way of avoiding stress.

Usually the animals arrive the night before they are killed, so they can calm down after the journey. Despite the radio, the lairage is a calm place, shielded from the noise and clang of machinery in the processing part of the abattoir just a wall away. The last time I was in a slaughterhouse, when reporting the rise of mad cow disease in the 1990s, I saw a production line without a whisper of humanity - the animals just commodities, raw materials to be processed, from the moment the lorry backed up to the unloading bay. Performance was measured in through-put, the number of animals killed per

minute. There was panic: beasts regularly broke legs in their efforts to escape. But here at Millers there seems to be some gentleness and respect.

A narrow steel corridor, known as the race, runs for a few yards and then turns a corner. It ends in a narrow stall, a box with doors. I go to stand on a platform above it. After a while, a brown Limousin heifer comes wandering down the passage, glancing up at me and Danny, the slaughterman. He leans over to check her ear-tags, and confers with the vet who must by law be present. The cow decides she doesn't like what's going on - she backs down the race again. Prods and goads are banned here: she is gently coaxed back up the line. She comes into the stall and its door closes. She looks up at me, more curious than nervous, and at that moment Ian places the gun to the centre of her flat forehead. There's a dull bang as six inches of steel rod goes into the heifer's brain. Her head goes up and she collapses, unconscious.

Danny pulls a lever, and her body slides out of the stall and through the wall, on to the floor of the next room. We move through. The carcass is twitching on the floor. Danny works fast - this part of the process must be completed in 60 seconds. He grabs a length of chain and hooks it around a back leg, above the knee. Then he hoists the heifer up till the head hangs five feet or so off the floor. Taking a knife he makes two large holes in her neck, through the jugular, so the blood gushes out. This is known as 'sticking'. Unconscious from the shock of the bolt, in a few moments the cow's heart will have pumped dry, it will stop and she will be dead. Ahead of her on the line the cattle that went before are being stripped of their skin, then eviscerated. One room further down the line and the heads, guts and hooves have been removed: the carcasses have been sawn in half and they are sides of meat, still warm but hardly recognisable. The process of transformation, from animal to supper, is numbingly fast.

Above the abattoir, up in Sandy Milne's office, there's a plate of beef - some rib-eye, some sirloin and some mince, cooked rare. It is shockingly good: juicy and a little gamey, so tender it seems to come apart at the mere threat of your teeth. Sandy, managing director of the little company, looks a little smug, as Murdo and I sigh at the pleasure of it. But then he knows that Millers' beef is good. Among his regular customers are Heston Blumenthal, Michel Roux and Antony Worrall Thompson, the Loch Fyne Restaurants chain and hero independent butchers like Kensington's Lidgate's. What's the secret?

'Well, what you're eating is dry-aged - it's spent three to four weeks in the chill room, dehumidified. It can lose 18 per cent of its weight in the process - and the costs go up. So it's expensive. But worth it.' Does the animal's state of mind really make a difference? 'Yes,' says Milne. 'We take the welfare issues very seriously. I mean, this is an abattoir, not a pet's home, but you've got to do the job as quietly as possible - no shouting and no carrying-on. We try to source as many of our animals as possible as locally as possible. We work to ensure they're not stressed in the lairage, and if they are, then we give them another night to calm down. We don't use goads. We keep bulls separate. There's no question that, the more placid and stress-free the beast, the better will be the taste. No argument.'

One other key detail the scientific research into animals and stress has thrown up is that long-term stress - as seen in animals raised on badly run farms - affects fat levels. And the amount of fat in meat is, according to many in the meat trade, the most important thing of all when it comes to taste. It's a well-kept secret, but restaurants habitually choose fatter meat than supermarkets do. Shoppers like lean meat, on health grounds or because they think they're paying for unnecessary extra weight. But a really great steak or roast needs 'marbling', the veins of white fat running through the red meat.

Laurent Vernet, who works for the meat marketing and educational body Quality Meat Scotland (QMS), thinks fat levels could be more important for good-tasting meat than breed or even diet. 'If you remove the fat from a piece of meat it changes - you need the fat because it carries the flavour. And when you cook meat that's marbled, the fat melts and it will make your mouth salivate - and that you translate as juiciness.' Vernet conducts an experiment when he's lecturing about Scottish meats. He offers them a taste of the leanest possible cut of beef and sheep, with as much fat as possible removed. Blindfolded, 50 per cent of the audience cannot tell which is the beef and which is the mutton. 'It's a paradox,' he says. 'People don't want the fat but they want the flavour. They think all fat is bad - but we're not asking them to swim in it. We have to try to communicate that.'

Millers of Speyside buy cattle a grade higher on the fat-measuring scale than do the supermarkets. 'It makes a big difference,' says Sandy Milne, as we finish up the last moist nugget of his heavenly dry-aged sirloin. 'Often I look at what the supermarkets do and you can't see a fault. At the top of the range they buy great meat, they're fussy about how it's raised, and they look after it. Yet time and again it just doesn't taste as good. Thank goodness - or we'd be out of work!' So it's the fat that makes the difference? He nods.

If fat levels and the consistent growth rate in meat are so important for flavour and quality, then clearly it's not just in the hours before its death that an animal needs to be kept calm and unstressed - it's a lifestyle thing. And that knowledge is beginning to drive the way farmers operate. QMS is running projects to measure the temperament of cattle on some Scottish farms, and relate that to meat quality. It looks increasingly possible to breed happy cows - farmers know that calm and sweetness of temper are an inheritable characteristic. I asked one farmer what he would do, if money were no object, to improve the happiness of his herd: his first choice would be to get rid of the beasts with the worst attitudes.

But there are more technological ways to mellow out your beef. In the rich farmlands of Angus, some of the world's most celebrated cattle-breeding land, we meet Adrian Ivory. He's in his thirties, and is a different sort of farmer from Bill Cassells - the Ivory family works 2,500 acres of arable and grazing at Islabank and their 175 cattle don't have names (except for the prize Simmental bull, Samson, a magnificent beast like something out of a Stubbs painting who cost £23,000). This is big - the average herd in Scotland is only 29 animals. The 90 or so young bulls that Adrian sells each year go a few miles away to Perth, to be slaughtered at an abattoir run by Anglo Beef

Processors. Most of Adrian's animals will end up at Sainsbury's as Best Scottish Beef.

Adrian is an enthusiastic farmer with a taste for innovation - he's trying Sainsbury's out on the idea of feeding linseed oil to his cattle, so the supermarket can push his meat for its omega-3 content. His businessman's head tells him that happy cattle are good for the balance sheet. And that is at least part of the reason behind the extraordinary new structure that sits beside his long cattle sheds. He takes us up on to the top of a mound in the yard to survey his revolutionary cattle-handling system - one of only two on its scale in the country. It's a bit like a maze in a theme park, except that it's made of steel and black reinforced rubber. At the heart of it is an enormous S-shape, narrowing as it gets to its top. 'It's an amazing thing - I was astonished when I saw how it performed,' he says.

This is a curved version of the 'race', the corridor system that farmers use to move animals for treatment or inspection or loading. Usually these are angular set-ups of fences. But the curve uses the natural curiosity of cows and their tendency to move in circles. They follow the S patiently, at their own rate and without stopping. The walls are six feet high, so they see nothing outside to frighten them. 'They want to see what's round the curve, so they keep moving. It's much less stressful for the animal, because there's no need for them to be prodded or shouted at,' says Adrian. 'There's huge benefits for the animal and for us.'

Every three weeks, for example, he has to weigh his bull calves to monitor their progress: the animals proceed up the S bends and into the weighing stall with no fuss. 'It used to take three hours to weigh 60 bulls, and now it takes 40 minutes.' It cost £25,000 to build and it's never going to make money, he says. But it makes the farm safer. 'And the feedback I'm getting from the slaughterhouse is that the meat is of a better quality. We've always been known for high quality, but using the curved race means the beef is less stressed.' Curves also reduce bruising, which can account for writing off of as much as six per cent of meat in the abattoir.

The curved race is the invention of an extraordinary American cattle expert, Temple Grandin. She is also celebrated for her books about her own autism - a condition that, she believes, helps her understand the minds of farm animals - since she sees and thinks in shapes, as they do. Using these insights, Grandin first suggested back in the Seventies that farms and slaughterhouses should eliminate sharp corners in their cattle-handling systems, and use curves precisely measured for the optimum encouragement of animals to move forwards.

Grandin's notions were revolutionary: the opposite of the cowboy methods for handling cattle. Rawhide techniques were out. Goads, whips, whistles and shouts were an inefficient way of moving animals around, she said. 'Handlers should be quiet...' she states in one of her many books. 'Calm cattle and pigs are easier to handle and move than excited animals. Animals that become agitated and excited bunch together and are more difficult to separate and

sort. It takes up to 20 minutes for the heart-rate of severely agitated cattle to return to normal... Yelling and whistling increases the heart-rate of cattle more than the sound of a gate slamming.'

Now 60, Grandin is professor of animal science at Colorado State University, and revered in the States by animal-welfare activists and the meat industry alike. It's said that 50 per cent of all farm animals in North America are handled according to her systems, because, quite simply, they work. Why, I asked Adrian Ivory, were we so behind in these ideas in Britain? Money is clearly a factor, he says. 'Farmers being farmers, they don't like spending money if it's not clearly going to bring them money.'

Recent years have not been good for British livestock producers: this summer's foot and mouth and blue tongue crises brought some of Miller's suppliers close to breaking point. The loss of export sales cost Sandy Milne 15% of his business. This was particularly unfair, since the outbreaks were in Surrey, some 400 miles away. But earlier this month the EU announced an end to the export ban on British beef and sheep: prices should soon rise and that may encourage the industry to look again at investment. In the spring, the abattoir to which Adrian sends his cattle was considering installing a curved race, so impressed were they by what they've seen at Islabank.

But the push for better-tasting meat from better-treated animals will, ultimately, be driven by supermarkets, and the people who shop there. 'It's a question of education,' says Bill Cassells. 'Children come to visit the farm, and they think it's terrible that the animals go for meat. "How can you do that?" they ask. They make no connection between supermarket and farm. If people lose touch with where their meat is coming from, they'll stop caring about it. That's what we need to reverse - we need to get people to understand how meat is made.'

## **A new standard for Britain's favourite meat**

**Under the RSPCA's Freedom Food scheme, chickens get a better deal before slaughter. Kate Hilpern reports**

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Most of us think of free range or organically reared chicken being streets ahead of their indoor reared counterparts in terms of animal welfare, but this is not necessarily the case. The Freedom Food scheme, which uses the RSPCA's standards for improving farm animal welfare, applies to all three systems of rearing and the good news is that there has been a significant increase in the number of chickens reared under the scheme.

While 2004 saw 10 million birds reared according to the Freedom Food scheme, this increased to 28 million birds in 2006 and 40 million this year. "That's a 43 per cent increase in the last year alone, which we are very happy about," says Dr Marc Cooper, senior scientist in the RSPCA's farm animals department.

He attributes the increase to greater public awareness about welfare conditions involved in chicken rearing. "There have been a number of TV programmes exploring the issue, for example by Hugh Fearnley-Whittingstall. People have started to think more ethically in their meat purchases as a result."

He adds, "There is also so much choice in supermarkets. People see logos like the Freedom Food scheme and they are curious about why it's different to any other type of meat – so they find out."

However, the welfare issues faced by many meat chickens (known as broilers) are still severe – with the Freedom Food scheme still only accounting for 4.26 per cent of the total broiler market. Broilers are genetically selected to grow quickly and the time from when the birds first hatch to appearing on the supermarket can be less than six weeks. They may put on weight so rapidly that they suffer from severe health problems such as lameness and heart defects.

Meanwhile, low space allowance can impair welfare both directly through movement restriction and indirectly by causing poor litter and air quality. This can also result in lameness, as well as skin disease.

Very low lighting intensities can be problematic too. Used to discourage activity and maximise growth rate, low light intensities can again cause lameness and skin diseases and at very low light levels, the development of eye abnormalities. Where near-continuous lighting is used to increase feed intake, there is evidence that broilers suffer from not having a proper night period.

"Typically, free range and organic systems provide better welfare than standard indoor chicken. But free range and organic chicken are not immune from welfare issues," stresses Dr Cooper. "Basic free range standards mean birds must have a certain amount of space, but we believe that other things are important too. For instance, you don't want the outside area to be a field with nothing else in it.

"Chickens need shade and shelter and they need enrichment items indoors too like straw bails and pecking objects, particularly as they can spend 50 per cent of their lives indoors before they go outside. Given that you can't legally slaughter a free range chicken until 56 days old and an organic chicken until 81 days, the period they spend indoors can actually be longer than an indoor reared chicken – which is often slaughtered at 37 days old."

Since chickens are by far the most numerous farm animals reared for meat in the UK, accounting for around one-third of total meat production, the need to address this is pressing, says Dr Cooper. "The average annual consumption of chicken meat in the UK exceeds that of any other meat," he says.

"Under the Freedom Food scheme, there are over 100 standards which ensure much better welfare for the birds," adds Dr Cooper.

The industry's own assurance scheme – Assured Chicken Production (ACP) – covers more than 90 per cent of UK producers, but it goes nowhere near as far as the Freedom Food scheme. For example, there is no growth rate restriction.

Among the efforts by the RSPCA to further improve matters include discussions with retailers on their meat sourcing policies, which have already led to the adoption of the RSPCA's stocking density requirement by Waitrose for its own-label chicken, by Tesco for its Willow Farm chicken range and by Marks & Spencer for its Oakham chicken range.

"Ultimately, we'd like to see all broilers reared to our standards under Freedom Food," says Dr Cooper.

## **Bird flu virus in Europe – a hidden danger**

H5N1 could become endemic in parts of the region – virus search in domestic ducks and geese crucial

**25 October 2007, Rome** – The avian influenza virus H5N1 could become entrenched in chickens and domestic ducks and geese in parts of Europe, FAO warned today.

The agency stressed that healthy domestic ducks and geese may transmit the virus to chickens and play a more important role in the persistence of the virus in the region than previously thought. H5N1 surveillance in countries with significant domestic duck and geese populations should be urgently increased.

FAO's warning followed the detection of H5N1 in diseased young domestic ducks by German scientists.

### **New chapter**

"It seems that a new chapter in the evolution of avian influenza may be unfolding silently in the heart of Europe," said FAO's Chief Veterinary Officer, Joseph Domenech. "If it turns out to be true that the H5N1 virus can persist in apparently healthy domestic duck and geese populations, then countries need to urgently reinforce their monitoring and surveillance schemes in all regions with significant duck and geese production for the presence of H5N1."

"Europe should prepare for further waves of avian influenza outbreaks, most probably in an east-west direction, if the virus succeeds in persisting throughout the year in domestic waterfowl. This heightens the need for increased surveillance and monitoring of possible virus circulation in domestic ducks and geese," Domenech said.

### **Ducks and geese**

The link between domestic ducks and geese and chickens is seen by many experts as one of the major underlying factors in outbreaks of HPAI in disease-entrenched

countries.

“We are particularly concerned about the Black Sea area which has a high concentration of chickens, ducks and geese,” said FAO senior animal health officer Jan Slingenbergh.

“In the Ukraine alone, the number of domestic ducks is estimated at around 20 million birds. In Romania, four million domestic ducks and four million domestic geese are found in the Danube delta. These figures compare easily with chicken and waterfowl densities in Asia, where the virus continues to circulate among chickens and has found a niche in countries with tens of millions of domestic ducks and geese,” Slingenbergh said.

Importantly, the Black Sea area serves as a main wintering area for migratory birds coming from Siberia and moving also to the Mediterranean and other regions. All countries bordering the Black Sea have experienced outbreaks of avian influenza in the past, favoured by traditional open poultry systems with poor separation between wild and domestic birds.

### **The German case**

The link between the H5N1 virus and domestic ducks and geese has recently been confirmed in Germany.

Scientists of the Friedrich-Loeffler-Institut in Riems have detected the H5N1 virus in diseased young ducks on a farm at the end of August. Further scrutiny at two other farms revealed that, despite the absence of clinical signs and mortality in these ducks, the animals had been in contact with the H5N1 virus, because their immune defense system showed antibodies, developed in response to the virus. Intensified monitoring finally confirmed pockets of H5N1 on one of the farms.

Based on its experience in fighting avian influenza around the world over the past three years, FAO considers that risk assessment, surveillance and virus search strategies should be reviewed, Domenech said.

Countries with significant domestic duck and geese populations in Western and Central Europe as well as the Black Sea region should consider the incidence in Germany as a wake-up call and should not limit the virus search to chickens. Good surveillance is already in place in many European countries and the European Commission has issued in 2007 very comprehensive guidelines.

But there are countries where more monitoring is urgently needed including more focus on ducks and geese which should be considered as particularly risky populations.

“It could well be that there is more virus circulation in Europe than currently assumed,” Slingenbergh said. “We are not saying that the virus is widely spread in European countries, in fact most of the countries are currently virus-free. But undetected localized virus spots in countries with significant waterfowl may pose a continuous risk.”

After Asia and Africa, Europe could become the third continent where the H5N1 could become endemic in some areas, FAO said.

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