Rare Burgers

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Rare Burgers:
Where are we now?

Few dishes have had quite the impact on the UK food scene over the past few years as rare burgers.

What started as very much an underground scene, a dirty secret for those in the know, exploded onto the UK restaurant scene when NCASS member the MeatWagon moved from burger van to pop-up to permanent location in the space of just a year. London's hipsters and trendy young things were queuing round the block for the chance to try one of their infamous 'Dead Hippies'.

Over the following months other burger vans and joints opened up to feed the growing demand for rare burgers, including several NCASS members across the capital and beyond. But as the trend grew so did concern amongst enforcement teams and the Food Standards Agency (FSA) over the safety of 'pink' burgers. This came to a head when Westminster Council enforced against a *Davy's* restaurant for what it considered to be breaches of food safety regulations.

Critical Controls

The best way to prevent serving contaminated food is to cook it well. In fact, in risk assessment speak, cooking is considered the critical control point to prevent food poisoning. You cook the food through, killing off any or all of the harmful bacteria and you can then serve it to the public with confidence.

But unlike chicken or pork, beef can be served rare or even blue. Many meat-lovers would consider a beef steak cooked to medium or beyond to be overcooked. So why would there be an additional risk with burgers?

The issue is that E.coli 0157 and other pathogens which exist in beef products usually sit on the surface of the cut of meat. That means that when you brown your steak you're effectively cooking off the harmful pathogens. But if you mince that same steak you could be pushing the pathogens through the beef and then not cooking them off. And that's when you could end up serving your customers E.coli or another potentially harmful pathogen.

This issue is compounded by the fact that, unlike bacteria such as salmonella, E.coli 0157 is a low dosage pathogen; consuming the smallest trace can cause severe illness or worse. This was one of the concerns held by Westminster Council and increasingly by other local authorities as the rare burger craze spread.

Cooked to 70ºC for 2 minutes

Current advice from the Chief Medical Officer – supported by the recent findings of the Advisory Committee on the Microbiological Safety of Food (ACMSF) – is that ground beef should be cooked to a core temperature of 70ºC for 2 minutes. This is still considered to be the critical control point and as such raises doubts as to whether businesses selling rare burgers were in fact able to effectively risk assess their business. That could cause legal issues (criminal and/or civil) for the food business.

In order for businesses to serve pink burgers, other control points might have to be found with which to risk assess the burgers if they were to be sold intentionally 'undercooked'. Alternatively proof could have to be provided on a business-by-business basis that the cooking methods used do in fact lead to the necessary kill rate of the pathogen.

Westminster vs *Davy's*

The *Davy's* restaurant chain challenged Westminster Council's actions against one of their restaurants in court and to the surprise of many food safety professionals, the judge upheld one of their arguments. Westminster Council had proposed two options which would improve the safety of undercooked burgers.

First, a method called "sear and shave", where the outside of the joint of meat is seared on a griddle or dipped in boiling water to cook off the pathogens before having the cooked outside layer then shaved off. The other option presented is challenge testing, where "burger patties are inoculated with E.coli in a scientific study to determine a time/temperature combination that will achieve pasteurisation." (William Hatchett, EHN online).

District Judge Elizabeth Roscoe stated during her ruling that she did not accept that the sear and shave method of preparing burgers was reasonable or would necessarily be safe in itself, as burgers produced in this way could still be contaminated.

Davy's also argued that European law superseded UK law and that protections existed for certain local culturally important dishes within EU law. That would mean that dishes such as steak tartar could be served across the EU. They also argued the meat supplied to them was of such high quality and that their meat supplier's processes meant that their meat could be assumed to be safe and therefore possible to sell and eat as tartar.

The FSA maintains that while in parts of Europe it may be culturally embedded to cook and serve meat rare, this was not the case in the UK. Therefore, this part of *Davy's*' argument could and may well be challenged.

UK abattoirs a "microbiological nightmare"

The other major point to come out of the case was made succinctly by Professor Pennington, a microbiologist who advises the FSA, and acted as an expert witness for Westminster in the case. He stated that abattoirs in the UK were a "microbiological nightmare" and that it could never be assumed that meat of any kind left them pathogen-free. The recent publication of figures of Campylobacter contamination of supermarket chicken has certainly supported this argument.

In the States, you can ask for your burger cooked how you like it, just like a steak. But in America, offcuts are taken from every carcass and tested. If the meat is shown to be contaminated, the carcass is not allowed to enter the food chain. This is not the case in the UK, where all meat is assumed to be contaminated and the only real solution is apparently to cook it through. In the USA, the recommended minimum cooking times and temperatures are lower than the UK, allowing burgers to be served pink, demonstrating the difference of approach and interpretation of the science.

Differences of opinion

The ACMSF produced a report which "considers the epidemiology of Escherichia coli O157, contamination of carcasses, meat and meat products, guidance on safe cooking of burgers in the US and in other countries and industry controls to ensure safety of cooked burgers."

This was brought about after an American fast-food chain challenged the UK Government's advice on the safe cooking of burgers, which differed from that provided in the US. In the US the advice is to cook meat to a core temperature of 71.1ºC as a minimum, but temperature probes should be used to ensure core temperatures have been met, rather than visual checks.

"Meat and poultry products cooked in official establishments in the USA are subject to specified legislative requirements. Fully cooked beef patties (burgers) must meet the following temperature/time requirements; 66.1°C (151°F) for 41 seconds, 66.7°C (152°F) for 32 seconds, 67.2°C (153°F) for 26 seconds, 67.8°C (154°F) for 20 seconds, 68.3°C (155°F) for 16 seconds, 68.9°C (156°F) for 13 seconds and 69.4°C (157°F) for 10 seconds (Anon 2006b)." That's a significant difference in opinion between the UK and the States. The report did find that incidences of E.coli are comparably greater in the US than they are in The UK. It was also noted that greater responsibility is placed on the consumer as US restaurants must provide warning signs as to the potential risks of eating undercooked food.

One of the main concerns raised in the review of previous studies into E.coli was the "long tail". While the initial introduction of heat had a significant effect in killing the pathogen, the kill rate of the bacteria tailed off rather than being fully eradicated. With such a low dosage required for E.coli infection, this suggested a persistent risk.

A need for temperature testing

The group did find that other time temperature combinations could potentially be effective, but that these would have to be tested and proven. This creates an issue for the FSA as their main priority is to protect the public. If they provide unclear information to the public they could find a significant increase in the occurrence of E.coli infection.

The FSA are currently carrying much-needed testing of different time-temperature combinations as well as other factors which may affect the pathogen kill rate, like fat or salt content, PH Level and storage methods. For example, pathogens in burgers that were stored as frozen had greater resistance to heat treatment (cooking).

The group concluded that the advice for cooking of burgers should remain at 70°C for 2 minutes as it "presents a high level of confidence of delivering a widely accepted inactivation standard (6-log), and ensures a wide safety margin in the face of considerable real-world variation." This statement is key to understanding the FSA's approach to the issue. In order to protect the public, the ACMSF and the FSA believe that cooking at a core temperature of 70°C for 2 minutes "ensures a wide safety margin" – presumably unlike the American approach.

Mixed messages for Local Authorities

One issue in the rare burgers saga is that mixed messages being received by local authorities have led to an inconsistent approach to enforcement. Many councils have banned food businesses from serving rare burgers, while others have allowed it. Businesses who do challenge test and have - in their opinions and those of their lawyers - robust systems in place are being marked down on their food hygiene scores.

Pink with a wink

Some restaurants claim not to sell rare burgers and risk assess for cooked burgers but then serve them "pink with a wink", with all of the inherent risks this entails. The FSA accepts that some food businesses that are testing produce may be able to both serve and risk assess pink burgers. However, they are understandably concerned that anyone could go to one of these outlets, see their popularity and decide to set up a similar business without taking the necessary precautions, leading to an E.coli outbreak and even fatalities.

Perhaps their biggest fear is that with the barbecue season approaching members of the public will buy cheap supermarket burgers, undercook them and unwittingly cause outbreaks of E.coli across the country. E.coli is an extremely dangerous pathogen and can cause life-changing illness or even death and the FSA are understandably determined to prevent this from happening.

A compromise (of sorts) is found

Despite the concerns of the authorities, many restaurants and food trucks have continued to sell rare burgers. Why? Either because they have been challenge-testing their meat since the *Davy's* case (if not before), or because they have not been aware of (or considerate) of the risks. Other methods of cleansing the meat have also been experimented with and incorporated into methodologies, like dipping the meat in a citric acid (lemon juice) wash. UV light and irradiation have also been proposed as safer methods, as have ways of removing any potential for human contact of the meat and therefore the potential for cross-contamination.

Testing safe & risk assessable cooking methods

The FSA have been testing time and temperature combinations for cooking burgers that have been intentionally inoculated with E.coli to find out what methods of preparation could be considered safe and risk assessable if any. The results of the testing may well show that the American approach is safe enough, but the chances are that you will also have to implement a testing programme in order to serve rare burgers. Obviously that will increase production costs, but it may well show that your methodology and your burgers are being served pathogen-free.

Food businesses must also inform their customers of the inherent risks of selling undercooked meat. As in America, restaurants serving rare burgers will have to signpost these risks to customers. The Nationwide Caterers Association has been sent a list of proposed wording by the FSA for our members to use, should they want to sell rare burgers. The FSA are looking for feedback from NCASS on the potential wording of the warning signs; so if you do sell or want to sell rare burgers, get in contact with us as soon as possible.

The FSA also plans to provide enforcement teams with clearer guidance on what is an acceptable risk and what due diligence businesses will have to demonstrate in order to produce pink burgers. Those that meet requirements should not be marked down on the FHRS, but those that don't will risk enforcement action.

However, as one of the UK's eminent food safety experts recently explained to me, even if you can convince your EHO that there is a strict HACCP system in place, the question remains whether those standards can be maintained, day-in and day-out. If not then you should not have pink burgers on the menu.

So can you sell burgers rare?

While testing is ongoing, the FSA are prepared to compromise with rare burger joints and to allow them to serve rare burgers if suitable due diligence is being carried out and on condition of accurate signposting. The costs of achieving this level of compliance may well mean that some businesses have to stop serving rare burgers, and those looking to start will have to go through a process of education and implementation. The FSA are keen to deter 'cowboys' from entering the industry and risking public safety. They hope to limit rare burgers to only the most diligent businesses.

NCASS have been invited to attend a new panel to develop Primary Authority assured HACCP procedures for our member businesses which in theory should be accepted by environmental health officers countrywide. It will give us the tools to help you to safely sell rare burgers as long as you are prepared to meet the more stringent requirements.

Is your insurance up to the job?

This process may take several months to complete but it does mean that diligent NCASS members may well be able to sell pink burgers in future, confident that their HACCP and procedures cover the risks effectively. If you decide to serve rare burgers you would be very well-advised to check your insurance covers to make sure that you would be protected should

enforcement action ever occur, as the *Davy's* chain advised following their court proceedings: "Our ability to stay the course was much aided by having proper insurance cover in place. *Davy's* would recommend that other food businesses check their cover if they wish to legitimately resist enforcement action."

Let's hope that assured advice and guidance can be agreed upon swiftly to limit the risks to customers and NCASS member businesses.

If you currently sell rare burgers or are considering doing so, please contact **mark@ncass.org.uk** as we have been asked to produce wording for signposting of rare burgers that is acceptable to NCASS members. Wording will need to be agreed before selling this product and we would also like to talk to you about your current methodology, what processes and controls you have in place.

Key facts about the sale of rare burgers

• Cooking burgers to a core temperature of 70°C for 2 minutes remains the advice from the FSA and ACMSF.

• E.coli 0157 is an extremely dangerous pathogen which can cause serious long term injuries and even death. Children, the old or infirm and pregnant women are considered to be at the greatest risk.

• E.coli is a low dose pathogen.

• There is an inherent risk to undercooking mince products and as such advice should be sought from your trade association AND your environmental health department before serving such products.

• You will likely have to demonstrate that your product is safe through regular microbiological testing.

• Failing to risk assess your business practices effectively puts your customers' health, and your business, at risk.

• Even meat bought from the finest sources may not be considered pathogen-free. The Food Standards Agency believe it should be assumed that all raw meat is contaminated.

• Research into safe cooking methods, including time/temperature combinations, is ongoing and the situation could change once that testing process has been completed. But stringent controls will still need to exist throughout the business.

• All businesses wanting to serve raw or rare meat will need to inform their customers through clear and effective signposting.

• To risk assess rare burgers effectively may require processes which allow cooking to be replaced as a 'critical control' by processes adopted at the abattoir, at the butcher's or during the preparation.

• The business's ability to maintain safe standards day-in and day-out will likely affect their ability to sell the product. If the EHOs are not confident of this, you cannot sell them.