- 8. If the test is positive for *L. monocytogenes* you will need to start a test-and-hold system for all batches of RTE meat.
- 9. You must send 5 samples from each batch of RTE meat to the lab for testing and hold the batch for a few days until you get a negative result which "clears" that batch.
- 10. You will need to do this for every batch of RTE meat you make until your environmental swabbing program has achieved three consecutive weeks of negative results

The cost of testing five samples from the same batch can be minimised if all five samples are tested as a composite. For each sample, the cost of this test is around \$75 for Initial Testing (looking for generic *Listeria*) plus an additional \$57 if Confirmatory Testing is needed.

Clearly, finding *L. monocytogenes* in Zone 1 will be costly, as will be the investigation to find out why the contamination occurred. Then you have to put in corrective action to make sure the contamination doesn't happen again. You also have product on hold until the lab clears it for sale.

What sort of corrective action do I need?

This depends on which Zone 1 site is contaminated. But suppose the positive swab comes from your slicer blade, typical corrective action would involve two stages:

Stage 1: Clearing out any contamination sites deep in the mechanism by:

- 1. Dismantling the slicer as fully as possible
- 2. Cleaning all parts in warm detergent
- 3. Rinsing them then soaking in concentrated sanitiser overnight. If you use a QUAT sanitiser use it at a concentration of 1000ppm.

Stage 2: Preventing another contamination event by:

- 1. Dismantling and cleaning effectively each day
- 2. Spraying the blade and guard with a "no-rinse" sanitiser before you start slicing. Your chemical supplier will be able to recommend a no-rinse sanitiser

You will need to document your corrective action and update your food safety plan.

Do I still want to vacuum pack RTE meats?

We did 10 workshops in South Australia – eight in country areas and two in Adelaide. It was at this stage in every workshop that a number of butchers reacted strongly to the impact of the new regulatory guidelines. Many said they'd stop vacuum packing RTE meats.

Here's one response "While you've been talking, I've been tapping out on the calculator how much I'd have to sell to pay for a positive in Zone 1. I've decided I'm not going to vac-pack RTE meats. I'll buy in my savs and sell them loose, and I'll slice meats and sell them in plastic bags or tubs".

Many butchers brought up the Christmas ham business and how straightforward it was to portion, vacuum-pack and store – you always knew what stock you had and it was convenient. But several said they'd used an antimicrobial spray last year and noticed the shelf-life extension. Their response was *"I'll spray the legs and store until we're ready to portion. Then I'll give each portion a quick mist in antimicrobial and sell in plastic bags. It's a change to the way I do business and it's a bit more work but I'm out of the testing trap".*

Product testing

As well as environmental testing you have to set up a product testing system by:

- 1. Documenting the testing program in your food safety program
- 2. Documenting corrective action in case of a positive
- 3. Saying how you will retain affected batches if you get a positive
- 4. Documenting a product recall program
- Testing RTE product (at least one sample) each fortnight for 3 months (6 samples). Over the 3 months you'll need to test every product type you manufacture. When you send a sample you'll need to send five separate subsamples, each weighing about 50-75g.

If all tests are negative, you can go to a less stringent testing regime – testing one sample every three months.

Assuming all your product tests are negative this part of the program will cost around \$650 in year 1, made up of nine tests at \$75/test; there may also be courier costs.

Red alert - a positive test for product!

If a product sample tests positive for *L. monocytogenes* you need to:

- Notify your controlling authority within 24 hours of receiving the result
- 2. Begin a clearance program on each batch
- 3. Test and hold each new batch until cleared by the lab
- 4. Do this until three consecutive batches all test negative. From each batch send five samples each of 50-75g to the laboratory
- 5. Revert to fortnightly sampling for the next three months

Your controlling authority will expect you to undertake a thorough review of your food safety plan to find out why product was positive for *L*. *monocytogenes* and to come up with corrective actions which will prevent a recurrence. This may involve more environmental testing and product testing.

Assuming your corrective action is effective and you get no more positive product tests the cost of closing out this investigation will be around \$650.

I still want to vacuum pack - how can I minimise my chances of getting a positive?

Trying to keep *Listeria* out of a retail butcher shop is difficult because it's an environmental organism, so it will enter your premises every time you open the door. And it's also present on raw meat, so you're literally surrounded by it. But if you're going ahead with vacuum packing here are some good ideas we heard from retail butchers for reducing the chance of a getting a positive.

Further information

Manager, Market Access Science and Technology lan Jenson

Ph: 02 9463 9264 ijenson@mla.com.au

Industry feedback

"My cleaning supplier recommended a no-rinse sanitiser and after I've cleaned up, and just before I start slicing, I spray it over my benches and slicer"

"I make sure I slice and pack cooked meats at a quiet time every week - when nothing else is happening – just me in the shop"

"I use Syringol and spray it over my table, knife, and slicer. Also the outside surfaces of cuts of meat just before I bag them"

"I do exactly the same but I use lactic acid as my spray"

Note that Syringol and lactic acid aren't the only antimicrobials used in the industry. Acetic acid and octanoic acid are also widely used and your chemical supplier will be able to advise you.

Want more help?

The Australian Meat Industry Council (AMIC) can provide information and assistance with this food safety program. Meat and Livestock Australia (MLA) has produced a booklet and a DVD specially designed to help you. It's available from your local AMIC office.



Level 1, 165 Walker Street North Sydney NSW 2060 Ph: 02 9463 9333 Fax: 02 9463 9393 www.mla.com.au

SEPTEMBER 2008 ISBN: 9781741912760 © Meat & Livestock Australia ABN 39 081 678 364





How to comply with Regulatory guidelines for the control of Listeria by meat retailers: advice on how to set up a testing program

NPA 27303 10/08

Background

The Meat Standards Committee (MSC) has brought out a new guideline on testing for *Listeria* (*Regulatory guidelines for the control of* Listeria). The guideline follows a food poisoning incident in South Australia in 2005 when ready-to-eat (RTE) meat was implicated as the cause of the listeriosis illnesses and deaths. This guideline is being implemented in each state and will affect retailers of RTE meats. The purpose of this brochure is to advise and assist you in complying with the new guidelines. We've written it following feedback from workshops held for retail butchers in South Australia and Victoria. We include some key points brought up by your colleagues in these States. We wish to thank Kevin Cottrill from the Australian Meat Industry Council and Geoff Raven from Primary Industry and Resources South Australia (PIRSA) for their contributions to this brochure.

Basic scope of the guideline

The guideline requires you to test your shop environment and your RTE product for *Listeria*. It sets out how many samples you must take and instructs you to include the new testing regime into your food safety plan. The guideline is similar to one dairy manufacturers have used for more than 10 years – from the largest operation to the smallest, boutique cheese plant. So don't think you're being singled out for special treatment.

What's the big deal with Listeria?

The bacterium is pathogenic and causes infections which range from mild, flu-like symptoms to meningitis. About 20-30% of those infected die. In Australia, old people and those with immune systems which are impaired are most likely to be infected and pregnant women, their foetuses and newly-born babies are also susceptible to *Listeria* infection.

Listeria is an environmental bacterium and gets into a wide range of foods. The type of testing set out in the guideline has already been implemented by other sectors of the food industry.

Am I affected by the new guideline?

You are affected if you manufacture and package cooked, cured/salted, ready-to-eat meat that is susceptible to growth of pathogens or production of toxins.

The guideline does not define "packaged" but it is understood that if you slice and sell meat over the counter, in a plastic bag, in greaseproof paper or in a plastic tub with a lid you will not be an "applicable meat business" as described in the guidelines. You will be affected only if you package RTE meat in vacuum packs or modified atmosphere packs.

RTE meats not included in the guideline

Bacon is not considered RTE, and ham steaks will not be included in the guideline providing you label them as requiring cooking before consumption. Dried meats such as jerky and fermented meats do not support the growth of *Listeria* and are also not covered by the guideline. You may package these meats in any format you choose.

Review of your operation

MLA has published a booklet, with industry consultation, called *Listeria monocytogenes in smallgoods: risks and controls*. If you don't have a copy check out at the end of this document how you can get the booklet, along with a DVD – which has been made specifically for retail butchers.

The guideline says you MUST review you operation to see how closely it complies with Section 2 of *Listeria monocytogenes* in smallgoods: risks and controls. This section is all about where *Listeria* comes from and how it gets into, and lives in, food premises. In Section 4 of the same booklet is a checklist which sets out features of an ideal operation for controlling *Listeria*. Unfortunately the typical retail butcher shop has few of these "ideal" features.

Environmental testing – is Listeria in your shop?

This is the first part of your new testing regime and the guideline divides your shop into two zones.

- Zone 1: Food contact surfaces, such as slicers, benches etc
- Zone 2: Non food contact surfaces, such as walls, floors, drains, chiller doors etc

You must set up a sampling schedule which takes in all these zones. One way of doing this is shown in the table below where "X" informs your controlling authority which site you intend to test each month. In the schedule below five sites are sampled each month and every site is included in a 3-month cycle. You can also record whether you will test before use (B) or in use (I).

Testing schedule (July-December 2008)

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Site	July	Aug	Sept	Oct	Nov	Dec					
Zone 1: Food contact surfaces											
Container	X (I)			X (I)							
Bench		X (I)			X (I)						
Cutting board	X (B)		X (I)	X (B)		X (I)					
Knives		X (I)			X (I)						
Slicer	X (B)		X (I)	X (B)		X (I)					
Zone 2: Non food contact surfaces											
Fridge door handle	X (I)			X (I)							
Vacuum machine	X (I)			X (I)							
Tap/sink		X (I)			X (I)						
Waste bin		X (B)			X (B)						
Drain		X (B)			X (B)						
Air conditioner			X (B)			X (B)					
Overhead structures (rails)			X (I)			X (I)					
Plastic curtains			X (I)			X (I)					

Minimum sampling plan for your premises

The guidelines require you to sample at least 5 sites each month, taken from both zones 1 and 2, and between clean surfaces and surfaces which are in use e.g. testing your slicer blade during the working day.

How do I do the testing?

You'll need to use a NATA-accredited laboratory. There's a good reason for this – *Listeria monocytogenes* is an extremely dangerous pathogen – much safer to let experienced lab staff handle it for you.

Each month, the laboratory will send you five swabs, ready-to-use, plus instructions on how to do the swabbing and how to send them back to the lab. They will incubate the swabs and send you a certificate with the result. All you have to do is swab the surfaces and record which site you've swabbed on the plastic holder which contains the swab.

Costs of testing

Costs will vary slightly between laboratories. You can find laboratories in your state at www.nata.com.au and get costs from them direct. In one state a NATA-lab has published its costs upfront at \$53.90 for 5 swabs and this includes courier costs. Other laboratories will charge different rates and you may have to include courier costs. So over year 1, if none of your swabs is positive your costs will be around \$650.

What is a positive swab?

When the lab processes a swab they do it in two stages:

- Stage 1 Initial Testing: Find out if generic *Listeria* is present
- Stage 2 Confirmatory Testing: If generic *Listeria* is present, the lab then does further testing to see whether it is *Listeria monocytogenes*. This further testing costs about \$57 per swab.

Recording results of your testing program

You can insert your test results into the table using "N" for a negative swab and "P" for a positive. In our example below you can see July and August swabs were all negative but, in September, the slicer tested positive.

Testing results (July-December 2008)

5. Keep testing every week until you get three consecutive weeks without a positive swab

You can see that getting a positive swab will involve you in finding out the cause of the contamination and in further testing. This means increased time and expense. At best you'll need swabs for three weeks (about \$160). However, if the contamination is from Zone 1 (food contact surfaces) the impact is more severe.

Red alert - a positive swab in Zone 1!

If a positive swab comes from Zone 1 you are required to take much greater precautions to ensure your RTE product is not contaminated:

- 1. Investigate the cause of the contamination
- 2. Initiate corrective action
- 3. Record what action you took

Site	July	Aug	Sept	Oct	Nov	Dec				
Zone 1: Food contact surfaces										
Container	N (I)			X (I)						
Bench		N (I)			X (I)					
Cutting board	N (B)		N (I)	X (B)		X (I)				
Knives		N (I)			X (I)					
Slicer	N (B)		P (I)	X (B)		X (I)				
Zone 2: Non food contact surfaces										
Fridge door handle	N (I)			X (I)						
Vacuum machine	N (I)			X (I)						
Tap/sink		N (I)			X (I)					
Waste bin		N (B)			X (B)					
Drain		N (B)			X (B)					
Air conditioner			N (B)			X (B)				
Overhead structures (rails)			N (I)			X (I)				
Plastic curtains			N (I)			X (I)				

What happens when I get a positive swab in Zone 2?

If you get a positive swab you are required to:

- 1. Investigate the cause of the contamination
- 2. Initiate corrective action
- 3. Record what action you took
- 4. Increase the frequency of testing to weekly (5 swabs per week)
- 4. Increase the frequency of testing to weekly (5 swabs per week)
- 5. Keep testing every week until you get three consecutive weeks without a positive swab
- 6. Have the positive swab tested to see if it's *L. monocytogenes*
- 7. Place all RTE meat in your premises on hold until the lab gives you the result of the test