

Medical Officer of Health Environmental Health ADVICE

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Environmental Health Quarterly Report

2001 Vol. 4, Issue 3

Introduction

Verotoxigenic *Escherichia coli* O157 (VTEC) was identified in a recent survey of rural water supplies. VTEC was not previously known to be present in waterways in New Zealand. In this issue we discuss the implications of infection with VTEC.

There have been a number of recent incursions of exotic mosquitoes in New Zealand. Auckland is a major port and there is the potential risk of other species of exotic mosquitoes becoming established in our region. Auckland

District Health Board's Public Health Protection Service undertakes mosquito monitoring in the Auckland region. This edition of Environmental Health advice outlines ways in which you can help prevent the establishment of exotic mosquitoes.

Fumigation procedures are regulated by the Fumigation Regulations 1967. We remind fumigation operators of their responsibilities under these Regulations. We also present a paralytic shellfish poison update.

Verotoxigenic *Escherichia coli* O157 (VTEC)

Verotoxigenic *Escherichia coli* O157 (VTEC) was identified in a recent survey of rural water supplies undertaken by Public Health protection, Auckland District Health Board. VTEC was not previously known to be present in waterways in New Zealand.

Infection with VTEC is a public health concern. The organism produces a toxin that can cause severe illness, and in some cases fatal disease. Children are at particular risk. Illness resulting from VTEC infection can cause bloody diarrhoea and abdominal cramps, however the disease may also cause non-bloody diarrhoea and no symptoms. The illness frequently resolves in five to ten days.

Infection with VTEC is diagnosed by detecting the bacterium in the stool. Most patients with VTEC infection recover without antibiotics or other specific treatment. It is thought that treatment with some antibiotics may precipitate kidney complications. In some cases the infection can cause a complication called hemolytic uremic syndrome, particularly in children under five. Hemolytic uremic syndrome results in red blood cells being destroyed and the kidneys fail. The syndrome is a life threatening condition.

VTEC lives in the intestines of healthy cattle and other animals. Whilst cattle are the most widely recognised carriers of VTEC, a number of other animal species have been shown to excrete the organism in their faeces. For example, goats, horses, deer, dogs, geese, lambs, young rabbits, piglets, cats and seagulls. Transmission of VTEC to humans can occur via a number of pathways. The main exposure pathways that have been identified from overseas studies are listed below. The importance of these risk factors in the New Zealand context is uncertain. To date no aetiological risk factor study on VTEC has been undertaken in New Zealand.

a) Drinking contaminated water

In rural areas where households use individual water supplies and are not on reticulated town water, there is a risk that

water supplies can become contaminated with human and animal waste. This can occur if water is drawn from a stream or spring, and surface water run off enters the water source. Similarly, a shallow bore may become contaminated with surface water. Roof water supplies can become contaminated when animal faecal material deposited on the roof is washed into the supply tank. Water from individual water supplies should be treated prior to consumption. This includes water used for drinking, cooking, brushing teeth and preparation of food.

It is recommended that households on individual water supplies treat their water prior to consumption. Water can be boiled prior to use, chemical treatment can be used, and other methods of treatment such as ultraviolet treatment are available. A Ministry of Health booklet titled "Household Water Supplies" is available free of charge from Public Health Protection. This booklet outlines the range of treatment options available.

b) Eating undercooked contaminated mince and mince products.

All mince products should be thoroughly cooked prior to consumption. Meat can potentially become contaminated with faecal material during slaughter.

c) Drinking unpasteurised milk.

Milk can become contaminated if the VTEC organism is present on the udder of the cow, or from contaminated equipment. It is important to pasteurise milk prior to consumption.

d) Other routes of infection.

Swimming in sewage contaminated water, consumption of vegetables irrigated with contaminated water, contact with animals and person to person spread are all possible routes of VTEC infection.

Prevention is the most effective way to avoid infection with VTEC. It is very important to use only treated or boiled water for human consumption. In addition, it is important to cook all mince and mince products thoroughly, to drink only pasteurised milk, and to keep raw meat separate from other foods. Vegetables and fruit should be peeled and or thoroughly washed with treated water before eating. It is also

important that hands are thoroughly washed after contact with animals, faeces or raw meat.

For further information:

- ▶ please ask for the Duty Environmental Health Protection Officer, phone (09) 262 1855

Paralytic Shellfish Poison update

Auckland District Health Board, Environmental Health Team has received a continuing number of enquiries as to whether shellfish are safe to collect and eat with the opening of the scallop season on the 15th July 2001. Testing of shellfish for all toxins, including the Paralytic Shellfish Poison (PSP) toxin *Gymnodinium catenatum* continues to show that the Kaipara Harbour - east of a line from Pouto to South Head is safe for collecting of all species of shellfish **including scallops**.

Phytoplankton and shellfish testing on the **West Coast** of the Auckland Region shows that the area **from South Kaipara Head, (excluding the mouth of the Kaipara Harbour), south to the Waikato River mouth is safe** for collecting of shellfish **including scallops except tuatua and toheroa**. This area also **includes the Manukau Harbour**.

Tuatua and toheroa have shown that they retain PSP longer than other shellfish species. For this reason the gut of crabs and crayfish from the West Coast should not be eaten, as tuatua is a common food source for both these species. Further sampling will be carried out to determine when these species are safe to consume. The public will be notified when levels are within the acceptable limit. PSP toxin results show that all parts of kina and paua are safe to eat.

Shellfish and phytoplankton tests on the **East Coast** of the Auckland Region have not indicated that the causative algae or toxins are present. **Scallops** can also be taken from this coastline.

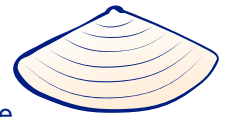
Testing of scallops for toxins will continue throughout the season as part of the ongoing biotoxin monitoring programme.

This is to ensure that scallops are safe to eat and any increases in toxin levels are detected promptly.

The public are reminded to eat only the muscle and roe of the scallop. The skirt and gut can contain higher levels of toxins. (We advise you not to feed the skirt and gut to pets.)

The following advice is also given to all boat owners:

Special care should be taken with boats and fishing gear that has been on the West Coast. Make sure you are not carrying seawater from the west coast to the east coast in your boat, and that you have washed your boat and gear thoroughly. This will reduce the possibility of transferring cysts of *Gymnodinium catenatum* to the East Coast.



For further information:

- ▶ Contact Dr Virginia Hope, Medical Officer of Health, or Leslie Breach Health Protection Officer, Auckland District Health Board (09) 262 1855
- The Ministry of Health also publish current information on their web site www.moh.govt.nz

Water Fluoridation in the Auckland Region

A National Forum on Water Fluoridation was held in Wellington in June. Some national strategies for raising awareness on the benefits of water fluoridation were identified. These include national resources for communities and local governments.

The decision to fluoridate community reticulated water supplies is a public health strategy that promotes the social, economic, cultural and environmental well being of communities. Evidence shows that fluoridation is a safe and effective way of preventing dental disease for all age groups (Ministry of Health, 1994).

Dental disease is one of the most common and costly diseases in New Zealand. Poor dental health causes lowered self-esteem, pain and discomfort, time off work and school,

and decreased employment opportunity.

Improvement of oral health is one of the priority areas in the New Zealand Health Strategy. If the non-fluoridated areas in the Auckland region were fluoridated there would be net saving in dental work of close to \$12,700,000 over thirty years. This cost saving would benefit both individuals and communities. Fluoridation contributes to equity in dental health because the most disadvantaged people in our communities benefit the most. It is in the interests of all New Zealanders for fluoridation to be as widespread as possible.

For further information:

- ▶ please contact Nicola Young (09) 262 1855.

Mosquito Control

There have been several interceptions of mosquitoes in New Zealand during the last seven years. There were two interceptions and one incursion in the Auckland region during the first 6 months of this year. Surveillance is carried out in the Auckland region to detect and monitor mosquito populations and breeding areas to ensure that exotic species do not become established. However, we need your help to eliminate potential mosquito breeding sites both at work and at home. Please try to undertake the following at home and advocate these actions at work.

Mosquito Control Checklist

First

- ✓ Get rid of all old tins, jars, bottles, plastic bags or other items that may collect water.

- ✓ Get rid of all old tyres and drill holes in tyre swings.
- ✓ Fill or drain hollows in the ground that can hold water.
- ✓ Overturn anything stored outside that could hold water (eg boats and canoes).
- ✓ Cover venting pipes on septic tanks with mosquito-proof covers.
- ✓ Seal or cover rainwater tanks.
- ✓ Stock ponds with mosquito-eating fish, e.g native bullies.

Then

- ✓ Empty and clean pot plant saucers and pet drinking water containers.
- ✓ Check gutters and drains are clear of leaves and blockages.



- ✓ Check pot plants for holding water in their leaves.
- ✓ Keep swimming pools well chlorinated, filtered and free of leaves.
- ✓ Empty paddling pools.
- ✓ Empty unused swimming and spa pools.

Avoid being bitten

Mosquitoes are often most active at dawn, around late afternoon and just after dusk.

If they continue to be a problem:

At home

- ✓ Put screens on windows and doors.
- ✓ Use sprays indoors when mosquitoes are around (non-allergenic products are available).

- ✓ Use mosquito coils.

Outdoors

- ✓ Wear a repellent cream or spray (a spray containing Deet is recommended).
- ✓ Wear protective clothing.
- ✓ Use screens on tents.
- ✓ Avoid places where mosquitoes are most active e.g swampy areas.

▶ If you have any concerns over possible breeding sites or queries over the identification of a mosquito, contact the duty Environmental Health Protection Officer, phone (09) 262 1855.

A reminder to all Fumigation operators

Public Health Protection has recently undertaken an audit of fumigation activities in the Auckland region. We have found that some companies are not meeting their legal requirements with regards to:

- 1 **Notification of fumigations;**
- 2 **Notification of fumigation accident reports;**
- 3 **Adequate fumigation supervision;**

We remind fumigation operators that the Fumigation Regulations 1967 requires the Medical Officer of Health to be notified of:

- ▶ All intended fumigations;
- ▶ All completed fumigations;
- ▶ All fumigation accidents which cause the death of, or *bodily injury* to any person.

Bodily injury includes:

- ▶ any condition requiring first aid treatment;
- ▶ a loss of consciousness for any period;
- ▶ any symptoms of illness attributable to the fumigant, whether temporary or permanent

The Hazardous Substances and New Organisms Act 1996 also requires hospitals to notify the Medical Officer of Health of all Hazardous Substance injuries.

We believe that fumigations are being conducted with only one person present. Not only is this a clear breach of Regulation 4 of the Fumigation Regulations but this also puts the fumigation operator at risk in the event of accident.

Regulation (4) of the Fumigation Regulations 1967 states that;

“No person shall carry out or cause to be carried out any fumigation unless -

The fumigation is carried out by an adequate number of persons being not less than two in any case...all persons engaged in the fumigation have received adequate instruction and training.”

▶ All notifications should be faxed to the attention of the Medical Officer of Health Fax no. (09) 630 7431 Phone (09) 262 1855.

Short Notes

▶ Swimming pool regulations

Swimming pool owners and operators are reminded that **NZS 5826:2000 Pool water quality** replaces the outdated NZS 5826:1985 Code of Practice for the Operation of Swimming Pools. The 2000 standard covers the management of all pool types including public and private pools, spa pools, geothermal pools and indoor and outdoor pools. The focus of this standard is to eliminate health threats to swimmers by effective pool water management. This standard covers testing criteria, water treatment, the use of chemicals, pollution procedures and effective pool management to protect the health and comfort of users. The standard is endorsed by the Ministry of Health. Copies of the **NZS 5826:2000 Pool water quality** standard can be purchased on-line from www.standards.co.nz.

▶ Information on Hazardous Substances and New Organisms Act

A detailed guide to the Hazardous Substances and New Organisms Act (HSNO) is available from the Ministry for the Environment for \$15 or free from their website www.mfe.govt.nz. Free brochures about the Act, including *Introduction*, *Hazardous Substances*, *Sources of Information*, and *HSNO and the RMA* are also available.



Diana Court

Diana Court is the Sampling Officer in Public Health Protection's Environmental Health Team. Diana graduated from the University of Auckland with a BSc in Environmental Science and is currently completing a Post Graduate Diploma in Environmental Science. She joined the Environmental Health Team in February 2000. Diana's work involves sampling and carrying out project work in the areas of drinking water, recreational water, lead, asbestos and exotic mosquito surveillance. Recent projects include surveys of drinking water quality at camping grounds and wharves.