



## How to avoid a salmonella outbreak

In most developing countries, salmonella is a major cause of illness and death in children under the age of five, warns **Zimbini Mdlulwa**, a researcher at the Agricultural Research Council.

Salmonella can cause a serious and sometimes fatal infection in anyone with a weakened immune system, in young children and in frail or elderly people.

Healthy people infected with salmonella often experience fever, diarrhoea, nausea, vomiting and abdominal pain within 12 to 72 hours after eating contaminated product.

The illness usually lasts four to seven days, but most people recover without treatment.

While the species of salmonella tend to vary from country to country, *Salmonella typhimurium* and *S. enteritidis* are the two most common. In South Africa, *Salmonella enterica serovar* subspecies *enteritidis* has become a serious pathogen, with some

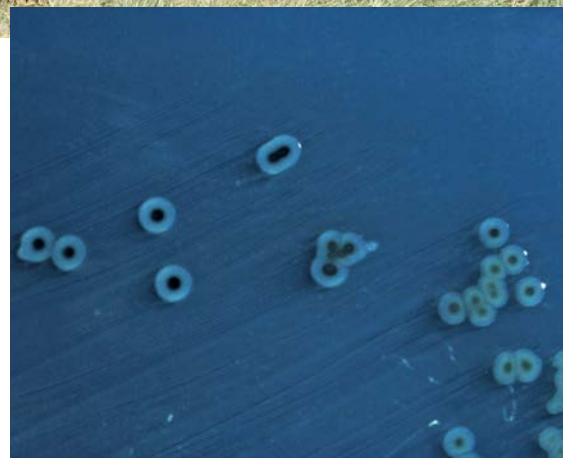
stakeholders calling for improved molecular surveillance.

Despite global efforts to curb its spread, *S. enteritidis* infections have persisted, creating an ongoing challenge to the global health system.

### **DISCARD OUTER LEAVES OR RINDS OF FRUITS AND VEGETABLES**

In fact, it is thought that salmonella infections are increasing, resulting in billions of rand being wasted on lost productivity and medical expenses.

It is important to manage an outbreak effectively and



**TOP:** Salmonella bacteria can be found in raw chicken eggs, as well as in poultry and meat, and can spread to vegetables, fruit and other foods.

**ABOVE** In a raw egg, the bacteria are found initially in the white. As the egg ages at room temperature, the yolk membrane breaks down and the bacteria spreads into the yolk.  
CENTERS FOR DISEASE CONTROL

to minimise consumer panic. Analysis of food safety related costs shows that it is cheaper for a producer to invest in preventing a food-borne outbreak than managing the fallout once it occurs.

### **ON THE FARM**

To prevent salmonella, a farmer should:

- Maintain clean facilities;
- Apply effective biosecurity practices to prevent the introduction of salmonella and other pathogens and



to limit its spread within the farm once detected;

- Apply fresh bedding regularly and remove all manure from the facilities;
- Clean calf-feeding facilities and oral treatment equipment regularly;
- Control rodents and insects, as these biological vectors can spread *S. enteritidis*, particularly in chicken houses;
- Rotate different classes of chemicals to prevent or reduce insecticide resistance.

### FOOD PREPARATION

At processing plants, in kitchens and in the home:

- Wash your hands thoroughly before preparing food;
- Keep food preparation areas clean;
- Avoid using and drinking unpasteurised milk.
- Thoroughly wash all produce before use;
- Peel and discard outer leaves or rinds of fruits and vegetables;
- Scrub vegetables such as potatoes and carrots if you wish to eat the skin;
- Cook and store food at the appropriate temperatures;
- Chill foods promptly after serving and when transporting from one place to another;
- Teach employees how to carry out proper cleaning and sanitising procedures;
- Avoid cross-contamination.

Do not allow food that is eaten raw, such as salad, to come into contact with raw food of animal origin. This can easily happen on dirty counter tops, kitchen sinks or cutting boards.

For the same reason, keep raw meat, poultry and seafood separate from other food items during shopping and store them separately in the fridge.

Wash utensils, cutting boards, dishes, and counter tops with hot, soapy water after preparing each food item and before preparing the next item.

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## BANANAS

# Dealing with banana bunchy top disease

This disease, which can destroy an entire crop, is now in South Africa. Because there is no cure, vigilance and proactive management are crucial.

Banana bunchy top disease (BBTD), caused by the banana bunchy top virus (BBTV), is the most serious viral disease of bananas worldwide. It is widespread in South East Asia and the South Pacific, and is present in parts of India and Africa. BBTV was first recorded in South Africa in 2015 at Hibberdene on the KwaZulu-Natal South Coast.

BBTV is transmitted by the banana aphid *Pentalonia nigronervosa* or by infected plant material. The aphid picks up the virus after feeding on infected plant material for at least four hours. The insect can retain the virus throughout its adult life (15 to 20 days), transmitting the virus to a healthy banana plant by feeding on it.

BBTD in South Africa is of major concern to the banana industry, as yield loss can be up to 100%. BBTV is a quarantine pest for South Africa in terms of the Agricultural Pest Act No. 36 of 1983.

### SYMPTOMS

Bunchy top disease is named after the characteristic symptoms of an advanced infection: the

leaves become progressively dwarfed, upright and bunched at the top of the plant.

The initial symptoms are dark green streaks in a dot-dash pattern on the lower portion of the leaf's midrib and later on the secondary veins.

As the infection progresses, the streak symptoms become more evident on the leaf blade. Each new leaf is narrower, shorter and more upright than the previous one.

BBTD symptoms appear about 25 days after infection by aphids. Asymptomatic plants may act as a source from which aphids can obtain the virus and spread it to surrounding plants. Infected plants bear deformed fruit or no fruit at all.

### CONTROL

BBTD has no cure. It is therefore essential to conduct regular inspections and remove infected plants. These should then be replaced with plantlets certified virus-free.

The virus can be controlled by treating the aphid infestation with a registered insecticide such as Imidacloprid, then burning all infected plant material.

It is essential to treat an infestation before destroying the infected plant; if the infected plant is destroyed first, the banana aphids will merely fly to nearby healthy plants and spread the disease.

• Source: Nunkumar, A. 2018: 'Banana bunchy top disease: a threat to the banana industry'. KZN Department of Agriculture & Rural Development, Directorate: Agricultural Crop Research Services. Retrieved from [kzndard.gov.za/resource-centre/fact-sheets-brochures-and-leaflets](http://kzndard.gov.za/resource-centre/fact-sheets-brochures-and-leaflets). ■FW

**BELOW:**  
A banana plant affected by bunchy top virus.  
SCOT NELSON

