

Risks of rats and mice to human and animal health

February 2018

RATS and mice are pesky intruders in the home, farm and work environment, gnawing through timber, wiring and the pantry – as well as causing major economic damage to crops, stored grain and other feedstuffs.

As a long-term supplier to rural communities, including pest control and a public health focus, Amgrow Specialty Ag is alerting the wider community to a more insidious and important reason for continual good control of both mice and rats – their growing implication in human health and animal diseases, which is generally overlooked alongside their more visible destructive impact.

Amgrow Specialty Ag business manager Chris Ramsey said rats and mice had major ramifications for human health and that of commercial livestock, pets and Australian wildlife.

“Diseases are transmitted to humans and other animals via rat and mouse droppings and urine that contaminate the environment, soil, water, feedstuffs, surfaces and the air; and via vermin such as ticks and fleas carried by these rodents.”

He said a 2009 Invasive Animals Cooperative Research Centre review of Australian research and studies reported a wide variety of pathogens and parasites carried by mice and rats in Australia.

“Important pathogenic bacteria carried by both rats and mice included *Leptospira*, which causes leptospirosis in a range of domestic and farm animals, as well as being a notifiable disease in humans. 58% of human infections notified in 2000 in Queensland reported exposure to rats.”

Mr Ramsey said a polyarthritis bacteria *Streptobacillus moniliformis* found in many rodents is the cause of rat-bite fever in humans, which can lead to complications such as endocarditis, meningitis and pneumonia. Another pathogen carried by rats causing polyarthritis in humans is the Gan Gan virus.

“One very concerning virus carried by mice and transmissible to humans is LCMV virus which can cause meningitis, abortion and foetal abnormalities. Another major public health issue still under study is mouse mammary tumour virus (MMTV) – found in mice and being considered as a potential causative agent in some human breast cancers.

“A significant parasite found in rats is lung worm *Angiostrongylus cantonensis*, another major cause of human meningitis, brain and nerve damage. Mice are also implicated as reservoirs for the transmission of the water-borne pathogens *Cryptosporidium* and *Giardia* that cause diarrhea in humans and other animals.

“The protozoan parasite *Neospora caninum*, considered common in rodents, is a significant cause of abortion in cattle and can also affect dogs, sheep, goats, deer and horses. And rodents are suspected as the possible source of a lethal koala retrovirus KoTV.”

Australian dairy and beef producers also have recent experience of waves of sudden cattle deaths caused by feed contaminated with botulism from the decaying bodies of rats, mice and other animals, inadvertently collected, trapped and killed in silage, grain and hay during harvest or storage.

Chris Ramsey: “So there are a great many, very important reasons to control rats and mice in your environment, and this is a very good time of year to start acting. Studies of mouse plagues in Australia show the main breeding season usually from October through to May at least, with peak numbers and potential plague proportions by early autumn.”

He urged communities, households and regional businesses including farms to commence a safe, year-round rodent-control program using world-leading TOMCAT baits in tamper-resistant bait stations – for increased human and non-target animal safety – and for bait protection and longevity against the elements.

“The easiest way to keep rat and mice populations to a minimum is continual, managed control.

“In a consistent rodent-baiting program, baits should be checked every week (more often with high populations) to determine activity; to ensure baits are replaced as soon as they are eaten; and to record all details –including bait-station locations, dates checked, and when fresh bait has been added.”

He added that public-health authority advice on protecting yourself from diseases carried by rodents included securing all foodstuffs in sealed containers; throwing away food or drink that may have come into contact with rats or mice; washing cutlery and crockery in warm water and detergent before use; and washing hands thoroughly before preparing food.

“Always wear gloves when handling dead rodents, and deeply bury them or wrap and place them into a domestic rubbish bin. Remember to wash your hands with warm water and soap immediately after handling any dead rodents. Your local council can provide further advice.”