

## PASTEURELLOSIS

### Oregon State University Rabbit Research Center Cheeke, Patton, Lukefahr and McNitt

Virtually all rabbitries are infected with *Pasteurella multocida*. Many rabbits carry this organism in their nose even when showing absolutely no signs of nasal discharge. The term “pasteurellosis” covers a multitude of clinical conditions all caused by *P. multocida*. By far the most common manifestation of pasteurellosis is the condition called *snuffles*. However, pasteurellosis is also evidenced by pneumonia, abscesses, weepy eyes, pyometra (**uterine infection**), orchitis (**testicular infection**), and wry neck.

### SNUFFLES

There is no such thing as a cold in rabbits. Mucopurulent nasal discharges (**pus**) that many people attribute to colds are almost invariably caused by *P. multocida* in conjunction with another bacterium called *Bordetella bronchisepticum*. This is not a transient condition like a cold, but one with permanent adverse effects on the animal. The preliminary signs of sneezing and discharge have to be differentiated from dust or drinking water in the nose. Usually if the sneezing continues, and especially if begin to feel a matting of the fur on the inside of the front feet (**a rabbit uses its front feet to wipe its nose**), you can be quite confident that snuffles has appeared in the rabbit herd. Snuffles are extremely contagious. Each time a rabbit sneezes it contaminates the surrounding area with thousands of bacteria. People themselves can spread these bacteria on their hands and clothes (**the chance of rabbits contracting snuffles at a show or fair is extremely good unless you are very careful and take precautions**). Rabbits can pass it to each other by contact, and equipment and cage accessories easily transmit the organism. The other forms of pasteurellosis mentioned above generally begin appearing after snuffles are noticed. Strict culling or isolation of rabbits with snuffles will keep the problem from getting out of hand. Rabbits can be treated for snuffles with a number of antibiotics. This treatment at first may appear to have been successful. The sneezing stops as does the discharge, but as soon as the rabbit is stressed (**often it is reproductive stress**), it breaks with the disease again and this time it is more difficult to treat. Vaccination for *P. multocida* has been tried many times by both researchers and rabbit growers, with little success. Vaccines have not been successful because there are many different strains of *P. multocida*, each of which would require its own vaccine. In addition, immunity has been shown to last only a few weeks. By far the most important factor in controlling snuffles is prevention. Strict sanitation, good ventilation, and strict culling aid in preventing the disease. Any rabbit displaying signs of snuffles should be immediately culled.

Ventilation is very important in the control of snuffles, since both humidity and ammonia are involved in transmission and development of this condition. Ammonia is produced by the action of bacteria on the urea excreted in rabbit urine. Urea is produced by rabbits and other animals from excess amino acids. Thus a high dietary protein level

will increase the amount of urea excreted, resulting in elevated levels of ammonia produced. High concentrations of ammonia in the atmosphere can have adverse effects on both animals and humans in the rabbitry. People working in poorly ventilated livestock facilities may develop headaches and respiratory problems. Ammonia increases the susceptibility of rabbits to snuffles and pneumonia. Exposure to ammonia damages the sensitive tissues of the nasal passages, allowing *P. multocida* to colonize the tissues. Problems from ammonia can be minimized by reducing the amount of the gas formed and by increasing its rate of removal from the building. Decrease ammonia production can be achieved by daily removal of the feces and urine. High humidity is a stress which increases respiratory disease, so methods of cleaning which minimize the use of water might be advantageous.

Proper building design can help to reduce ammonia and snuffles problems. In temperate areas, long, narrow buildings with open sides for natural ventilation give the best results.

**Submitted by: David A. Mangione**