

Hopes for sheep vaccine

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A CONTAGIOUS disease that can lame sheep and cost the wool industry millions of dollars a year could soon be prevented by a new vaccine after DNA research by Australian scientists.

After years of studying sheep footrot, a team from Monash University has identified eight proteins in the disease-causing bacterium that are described as "lead candidates for a vaccine".

The discovery, published today in the *Nature Biotechnology* journal, comes after work with US scientists to complete the DNA sequence of the

bacterium, *Dichelobacter nodosus*.

"This finding has the potential to eliminate or greatly reduce the incidence of this disease from Australian sheep farms," said project leader Professor Julian Rood, of the university's microbiology department.

"If we can do that, it will be a very significant development that will save Australian producers a lot of money."

Through the DNA analysis, the scientists identified 99 proteins that may be on the surface of the bacterium, which means they are more likely to produce an immune response in the animal than proteins

buried inside the bacterial cell.

Preliminary experiments combining antibodies from infected sheep with eight of these surface proteins showed the serum recognised the proteins, making them promising candidates for a vaccine. Researchers hope to start vaccine trials this year.

The footrot bacterium, which thrives in warm, humid environments, affects the tissue between the horn and the flesh of the sheep's hoof. A report completed last year by Meat and Livestock Australia and Australian Wool Innovation estimated the cost of footrot to the industry at \$18.5 million a year.