

Salmonella diagnostic testing and serotyping in Southern Australian dairy herds.

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INTRODUCTION

A Salmonella diagnostic program was conducted between 2017 and 2019 in Southern Australian dairy herds.

OBJECTIVE

The program sought to identify Salmonella isolates in bovine faecal samples from suspect Salmonella cases.

Where a positive diagnosis of Salmonella was confirmed, the Salmonella isolate present was identified.

The program sought to compare the isolates identified with those present in commercially available vaccines, to allow veterinarians to make an informed decision on Salmonella vaccination.

MATERIALS AND METHODS

A total of 680 faecal samples from clinical cases were submitted by veterinarians who suspected that Salmonella species may have been contributing to disease in the cattle or on the property.

Samples from mixed aged cattle, ranging from young calves to older cows, were submitted to a central veterinary diagnostic laboratory for culture using Salmonella enrichment media.

Sensitivity testing was performed on any Salmonella isolates grown and isolates were sent to the Microbiological Diagnostic Unit of Melbourne University for serotyping.

Serotypes identified and their serogroups were compared to the serotypes and serogroups that are represented in the commercially available Australian vaccines, those being *Salmonella typhimurium* (serogroup B), *S. dublin* (D), *S. bovismorbificans* (C2), *S. uganda* (E1) and *S. zanzibar* (E1).

In this study a number of different Salmonella serotypes and serogroups were identified, but the majority were very closely matched to the two Australian Salmonella cattle vaccines.



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RESULTS

From 680 samples submitted, a total of 219 (32.2%) Salmonella was isolated.

Figure 1: Identified Salmonella strains.

Figure 2: Sampled regions

Of the isolates that were fully serotyped, 87% (168/193) were found to have commonality to one of the serotypes in the Australian vaccines. When considering serotype and serogroup, it was found that 95% (209/221) of isolates shared either commonality of serotype or serogroup with the Salmonella strains in the vaccines. When considering the registered vaccine containing *Salmonella typhimurium* and *S dublin*, 49.4% of isolates were definitively identified as being one of these serotypes.

FIGURE 1. Salmonella strains identified from Salmonella positive samples.

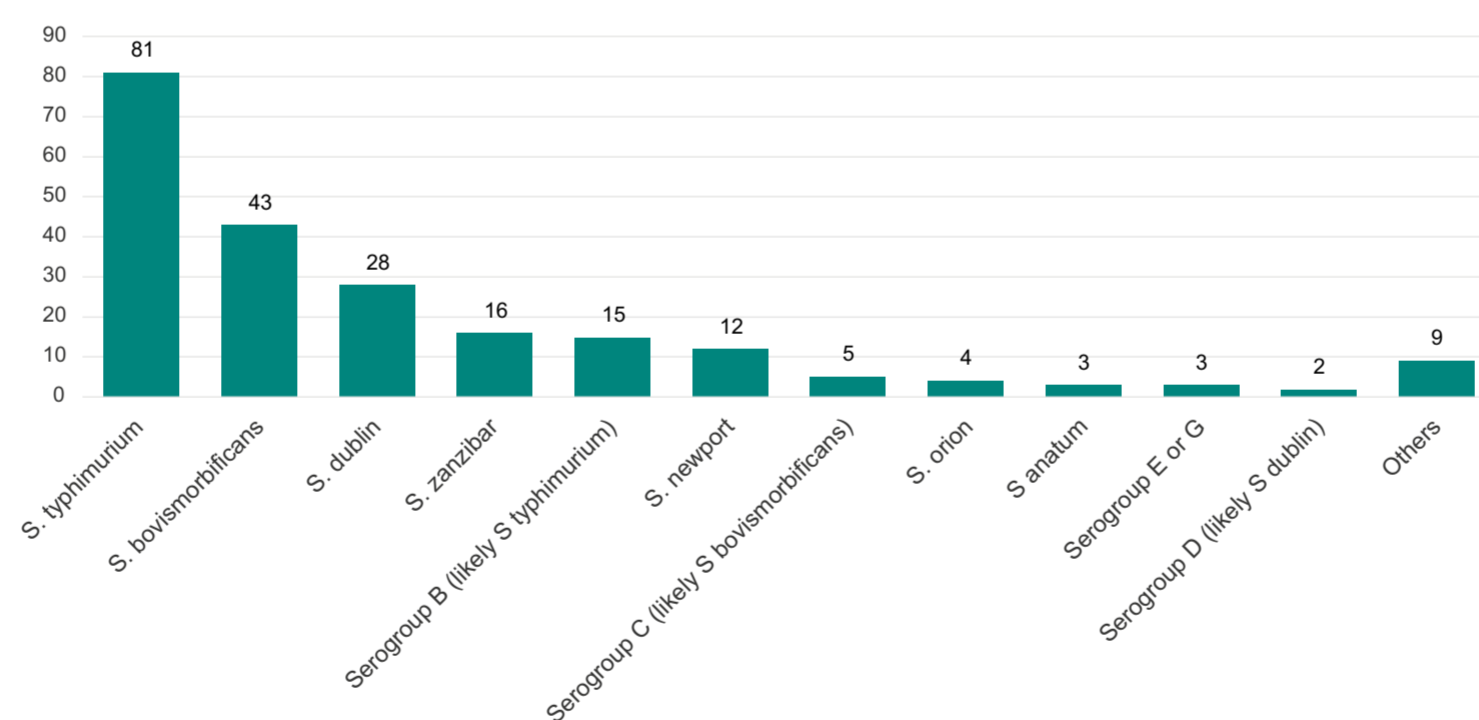
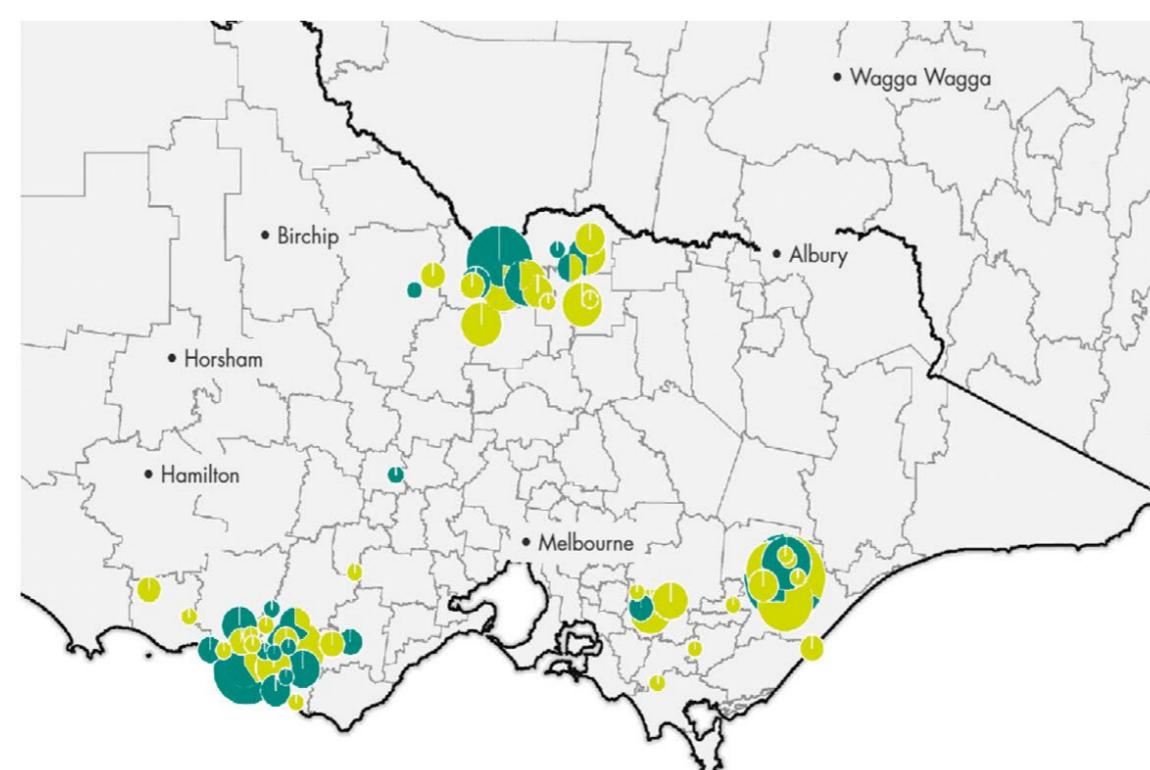
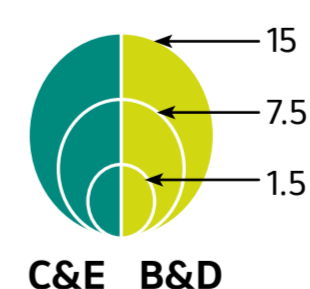


FIGURE 2. Southern Australian Geographical regions that samples were collected from – North-East Victoria, Victorian Western Districts and Gippsland.



Salmonella positive results



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