

# Towards the development of a method for determining the antimicrobial susceptibility of *Brachyspira*

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Project Status: Completed in 2018

Researchers have successfully developed a new susceptibility method to identify the most effective antimicrobials for treating specific strains of *Brachyspira*. This test will help swine health practitioners be able to select the most effective and appropriate therapy to treat swine herds. Researchers hope to offer this test to the Canadian swine industry by early 2019.

## Why was this study done?

Since 2008, *Brachyspira*-associated disease has re-emerged as a serious cause of morbidity and economic loss in Canadian swine herds. The identification of a novel specie of *Brachyspira*, named '*Brachyspira hamptonii*', which causes severe disease in pigs, is also concerning. Through this project, researchers wanted to develop tools to help combat *Brachyspira*-associated disease.

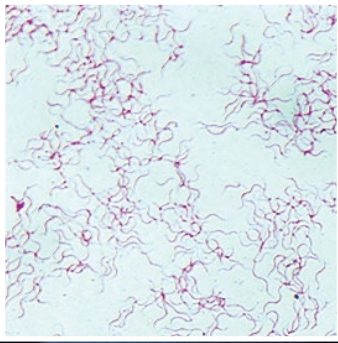
## What was done and what was the outcome?

The *Brachyspira* Research Group at University of Saskatchewan worked to develop standardized methods for conducting tests to determine if antibiotics were effective against this type of bacteria. Researchers first addressed some basic questions about the growth characteristics of *Brachyspira* that needed to be understood before clinical laboratory testing could begin. Then, they successfully developed a new susceptibility method to identify the most effective antimicrobials for treating specific strains of *Brachyspira*. They started pilot trials with several swine veterinarians in the fall of 2017 and hope to offer this test to the whole industry in early 2019.

The research group has also begun to further study the genetic determinants of *Brachyspira*'s resistance to antibiotics, and will continue to expand upon this work.

## Collaborators

**John Harding** University  
**Janet Hill** of Saskatchewan



A gram stain of *Brachyspira hamptonii*.  
Source: University of Saskatchewan



Reading susceptibility test in the lab. Michelle Sniatynski.  
Source: University of Saskatchewan

## Additional project information

Click on the links below for further information on this project

*Links were last updated in 2022*

### R&D Featured Articles—by Geoff Geddes for Swine Innovation Porc

Articles may be found at: <http://www.swineinnovationporc.ca/resources-e-newsletters.php>

- [Swine Health Research Just as the Doctor Ordered](#)  
- August 2019 (Vol.4, No. 12.)
- [Brachyspira 2.0: Novel Disease Needs Novel Approach](#)  
- November 2018 (Vol. 3, No. 16.)

### Farmscape Interviews:

- [Improved Diagnostics Promise Reduced Turn Around Times and Costs](#)  
- June 12, 2019
- [New Brachyspira Susceptibility Test Method Expected to Speed Up Treatment Selection](#)  
- May 3, 2018
- [New Brachyspira Diagnostic Method Expected in 2019](#)  
- April 26, 2018
- [Scientists Target Reduced Cost and Use of Antimicrobials to Treat \*Brachyspira\*](#)  
- July 21, 2015
- [Researchers Examine Antimicrobial Resistance Issues When Treating \*Brachyspira\*](#)  
- March 9, 2015
- [Researchers Target Specific Strains of \*Brachyspira\*](#)  
- February 24, 2015
- [Lack of Standardized Tests Creates Challenges in Dealing with \*Brachyspira\*](#)  
- December 29, 2014
- [Standardized Diagnostics for \*Brachyspira\* Expected to Improve Treatment](#)  
- November 18, 2014

### Peer-reviewed articles:

- Kulathunga Dharmasiri, G., Rubin, J. (2017) [A review of the current state of antimicrobial test methods for \*Brachyspira\*](#). Article. *Canadian Journal of Microbiology*, 63(6): pp. 465-474.  
DOI: <https://doi.org/10.1139/cjm-2016-0756>.

### Additional Resources:

- Rubin J. (2017) [Antimicrobial resistant brachyspira](#). Web page on *The Rubin Lab*.  
Retrieved from: <http://www.therubinlab.com/>
- Kulathunga Dharmasiri G., Rubin, J. (2016) [Antimicrobial susceptibility of Western Canadian \*Brachyspira\* isolates](#). Abstract. *Proceedings of the 7th International Conference on Colonic Spirochaetal Infections in Animals and Humans, 6-7 October 2016, Hannover, Germany*. p. 70.  
Retrieved from: <http://www.brachyspira.se/brachyspira/templates/stdmall.php?id=23>

## Financial support for this project

This project is part of the Swine Cluster 2 (2013-2018) research program, made possible through financial support from Agriculture and Agri-Food Canada, eight provincial pork producer organizations and over 30 industry partners. [Click here to learn more about the financial partners for Swine Cluster 2.](#)

