

## An estimation cost calculator to assess the economic impacts of *Mycoplasma hyopneumoniae* disease

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### Highlights:

- A web-based tool was created to help producers quantify the implications of *Mycoplasma hyopneumoniae* infections based on their specific farm data
- The instrument allows for educated decision making when considering elimination programs in sow farms

### Background:

*Mycoplasma hyopneumoniae* (*M. hyopneumoniae*) is a bacterium that affects swine, resulting in significant production losses to the industry. The pathogen causes respiratory diseases, which negatively impacts animal welfare through the development of pneumonia and decreases the growth rate of pigs. Currently, tools for producers to help calculate the cost of disease caused by *M. hyopneumoniae* are not widely available.

### Methods:

This project developed a simple web-based calculator to allow producers to input their specific farm data and receive an estimated value of the cost of *M. hyopneumoniae* in their operation. The calculator was created using Google Apps Script, which was linked to a Google Sheets backend for real-time calculations. An artificial intelligence program (ChatGPT) was utilized to assist with setting up the Google Sheet and creating code snippets for the application. Data used to develop the calculations was obtained from various sources, including historic data and closeouts from several production systems across the United States (Yeske, 2025; Schwartz, 2025) and a recently published thesis (Britton, 2024). The data obtained evaluated the effect of *M. hyopneumoniae* on sow farm production indicators as well as growing pig operations. Altogether, values were used to obtain ranges for various production factors, including litters farrowed per year, number of non-productive days per year, average daily gain, and mortality rate. The calculator allows producers to use these recommended ranges for their input if certain values are unknown. By inputting current production data and ideal target goals, a delta was used to create a negative standard specific to each farm. A partial budget spreadsheet was provided by a swine practitioner (Yeske, P., personal communication). The equations included in the partial budget were used for calculating producers values.

### Conclusions and implications:

The calculator has been designed to be simple yet efficient. Producers can input already calculated farm-specific parameters, including piglets weaned per year, mortality rate, ADG, and elimination protocol information, if applicable. The calculations will appear on a new tab in a clean and user-friendly format. This calculator allows producers to visualize how much *M. hyopneumoniae* may be costing their operation. Producers can also learn about the return on investment if they choose to undergo an elimination protocol. Elimination protocols have been proven successful and farms continue to maintain a negative status even in pig-dense areas. While these values are not exact, this calculator can help inform producers of possible opportunity losses that can be further discussed with their veterinarian. This information will aid in realizing the potential loss that *M. hyopneumoniae* is contributing to at their farm, and encourage producers to take the next steps in helping Minnesota eradicate *M. hyopneumoniae*.

**Find the calculator here:** <https://www.mnpork.com/join-the-movement-to-strengthen-swine-health-in-minnesota/>