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ii
Administration of a Single Oral Dose of Vaccine Provides at Least 18 Weeks Duration of Immunity as an Aid in the Prevention and Control of Erysipelas

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Summary
Objective: The objective of the study was to evaluate immunity in pigs 128 days following a single oral dose of Erysipelothrix Rhusiopathiae Vaccine, Avirulent Live Culture (Ingelvac® ERY-ALC).

Methods: Pigs were obtained from a source farm that does not use erysipelas vaccines or bacterins. Previous studies using this source farm indicated the pigs were susceptible to virulent challenge with Erysipelothrix rhusiopathiae. Twenty-one pigs were vaccinated orally with one dose of Ingelvac® ERY-ALC at 8 weeks of age (Group 1), twenty-two pigs were vaccinated at 5 weeks of age (Group 2), and thirteen pigs were retained as non-vaccinated controls (Group 3). One hundred twenty-eight days following vaccination all study pigs were challenged with a heterologous strain of virulent Erysipelothrix rhusiopathiae by intramuscular injection of strain E1-6P. Rectal temperatures and clinical assessments for signs of erysipelas in each study animal were recorded daily from 2 days prior to challenge through 7 days following challenge. At study termination pigs were euthanized. Tissues were collected for bacterial culture from those pigs that exhibited clinical signs of erysipelas during the study.

Results: One oral dose of Ingelvac® ERY-ALC provided statistically significant protection from clinical signs of erysipelas in pigs challenged with virulent Erysipelothrix rhusiopathiae 128 days following vaccination. Nineteen (90%) of twenty-one Group 1 pigs vaccinated at 8 weeks of age, and 16 (76%) of twenty-two Group 2 pigs vaccinated at 5 weeks of age were protected. Protection was evaluated by absence of persistent clinical signs and fever for the seven days following challenge with Erysipelothrix rhusiopathiae. All twelve (100%) Group 3 non-vaccinated control pigs became ill with high fever and red, raised skin lesions following challenge. Six non-vaccinated control pigs died with lesions of erysipelas. One Group 1 pig vaccinated at 8 weeks of age also died of erysipelas. All Group 2 pigs survived the challenge. Hence, vaccination at 8 or at 5 weeks of age significantly reduced mortality from acute erysipelas. Erysipelothrix rhusiopathiae was cultured from the tissues of clinically affected pigs as follows: 10 of 12 non-vaccinated controls, 1 of 2 Group 1 pigs, and 1 of 5 Group 2 pigs. Use of the vaccine also significantly reduced the occurrence of Erysipelothrix rhusiopathiae in the tissues of clinically affected pigs at necropsy. The levels of immunity achieved by vaccination at either 5 or 8 weeks of age were not significantly different.

Implications: Oral administration of Ingelvac® ERY-ALC to nursery pigs via the drinking water using conventional equipment may provide an effective, labor saving method to aid in the control of erysipelas from the nursery through finishing. Other vaccines or bacterins available as aids for control of erysipelas either have no data supporting the duration of immunity or require 2 doses by intramuscular injection to provide duration of immunity in vaccinated pigs.

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