

FACTORS ASSOCIATED WITH SUCCESS IN ERADICATING PSEUDORABIES (AUJESZKY'S DISEASE) VIRUS FROM ILLINOIS SWINE HERDS

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The state of Illinois (U.S.A.) has had an eradication program for the elimination of pseudorabies virus (PRV) from swine herds since 1986. The goal for each herd is to achieve a PRV negative status within three years.

The Illinois Department of Agriculture maintains a computerized data base on the PRV eradication program, including data on herd demographic and management characteristics, and all PRV serological testing. Data from 196 farrow-to-finish operations quarantined during the voluntary phase (1986-87) of the PRV eradication program were used in analysis. The statistical model utilized was multiple logistic regression, with success (vs. failure) in achieving the three year eradication goal as the dependent variable. Model independent variables were: initial PRV seroprevalence, size of sow herd, type of housing (total and partial confinement vs. pasture), density of PRV infected herds in township, vaccination [2 contrasts: vaccine (vs. no vaccine), modified live (vs. killed)], delay time (from quarantine until signing clean-up agreement) and use of PRV intervention strategies (depopulation, test and removal, offspring segregation).

The three year eradication goal was achieved by 48% of the herds. The logistic regression analysis indicated that an increased probability of success in eradicating PRV within three years was associated with decreased delay time in starting the clean up program [$p=0.0067$], use of killed vaccine (vs. modified live) [$p=0.0020$], non-use of vaccine [$p=0.0013$], smaller herd size [$p=0.042$], and lower geographic density of PRV infected herds [$p=0.003$]. The decreased success with vaccination (and in using modified live versus killed vaccine) may be due to the lack of a vaccine differential diagnostic during the voluntary phase of the program. Despite the diversity existing among the herds participating in the voluntary program (in time since initial infection and in intervention methods utilized prior to development of a herd plan), the evidence supports the view that large herds in endemic areas will require a longer time for release from quarantine.