



Figure 1. Twenty-five years of NPA cases (1133) in Kentucky.

tissue in 2002. In 2003, three species of *Amycolatopsis* and in 2009 two species of *Streptomyces* were identified in association with NPA cases. *Amycolatopsis* spp. (48.7%) and *Crossiella equi* (28.9%) were the most prominent nocardioforms identified in a recent abortion outbreak. This infection leads to late abortions, stillbirths and premature foaling. Premature foals sometimes die shortly after birth. The mode of transmission of this syndrome is not known. To date, nocardioform *Actinomyces* have only been isolated from placental tissue. Most reported cases are from central Kentucky (Figure 1) but cases have also been diagnosed in Florida, Italy, and South Africa. In the 2010–2011 equine reproductive season, our Lexington laboratory diagnosed 118 cases of NPA by culture and PCR. Due to the high incidence of NPA that season, a farm-level study was conducted to identify possible risk factors for NPA. A total of 148 horse farms were included in a survey (98 affected, 50 farms unaffected). In total, 8075 mares were at risk on all farms with 429 mares diagnosed with NPA. On average, four mares were affected per farm. Data were analysed using chi-squared, Wilcoxon rank-sum tests, and logistic regression analysis using S-PLUS. Farm acreage, mare numbers, and higher density on affected farms were significantly and positively associated with NPA. Longer grazing times during January–March administration of progesterone pre-breeding, HCG post-breeding, and NSAIDs were significantly and negatively associated with NPA. A study at the University of Kentucky attempted to induce NPA in pregnant and non-pregnant mares via intrauterine, oral, and intranasopharyngeal inoculation of *Crossiella equi*. However, these attempts did not result in infections or abortions.

## References

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## O11

### Contagious Equine Metritis: Efficacy of US post-entry testing protocols for identifying carrier stallions and mares

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Contagious equine metritis (CEM) is a venereally transmissible disease of equids. The etiologic bacterium, *Taylorella equigenitalis*, can cause widespread short-term infertility and very rarely, abortion in mares. A frequent sequel to exposure of stallions and mares to *T. equigenitalis* is establishment of a carrier state that is often long-term in stallions. Aims of this study are twofold: 1) to estimate frequency of the carrier state in stallions and mares by states testing the greatest number of imported horses for CEM; and 2) to establish the basis of determination of persistence of *T. equigenitalis* in individual carrier animals. Test subjects were stallions and mares imported between 1997 and 2014. Mares and stallions underwent post-entry quarantine and testing for CEM in accordance with USDA prescribed protocols. Findings of the study confirmed that there was a continuing risk of reintroduction of CEM into the USA from known CEM-affected countries. Over the 17-year study period, 38 stallions and mares were confirmed carriers of *T. equigenitalis*. Twenty-seven were stallions and 11 were mares. Some 24 of the carrier stallions and all 11 of the carrier mares were identified by the six selected states. There were two instances, both involving stallions, where the post-entry testing protocol failed to detect the carrier state prior to the stallion's release from quarantine. Only eight of the 27 carrier stallions were detected by culturing a single set of swabs. Detection of the carrier state in 18 stallions was only achieved by test breeding. The preponderance (80%) of *T. equigenitalis* strains isolated either from stallions or mares were streptomycin sensitive. The overall positive rate for stallions was 0.98% (24 of 2,457 tested), whereas the corresponding rate for mares was 0.07% (11 out of 15,732). Test breeding as opposed to sole use of culture was a highly reliable but not totally foolproof means of identifying the carrier stallion. A fully validated, less costly, more rapid, and logistically less challenging *in vitro* test is sorely needed for detection of the carrier state, especially in the stallion.

## O60

### Sensitivity of qPCR for screening cryopreserved semen from *Taylorella equigenitalis*-carrier stallions

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The risk for disease transmission via cryopreserved semen contaminated with *Taylorella equigenitalis* remains largely