

think fresh

INMEVATERS

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A long-term vision and history of collaborative research on behalf of our region and nation







Partnerships

- American Horse Council
- Industry Partner
 (Veterinary Medical Research and Development)
- State Veterinarians/Private Ranches
- National and International Research Collaborators
- Offices of Technology Transfer (WSU & USDA)
- USDA, ARS & APHIS (National Veterinary Service Laboratory)



- James Allison
- Kelly Brayton
- Ben Espy
- Ralph Horn
- Robert Harrington
- Steven Hennager
- Lowell Kappmeyer
- Amy Mann
- Robert Mealey
- Lance Perryman
- Glen Scoles
- David Stiller
- Massaro Ueti

- Scott Adams
- Tom Bunn
- David Herndon
- Leonard Eldridge
- Nita Grause
- Travis McGuire
- Guy Palmer
- David Prieur
- Vish Nene
- Susan Noh
- Nicolas Schwint
- Varda Shkap
- Peter Timoney



Why invest in animal health?



The Horse-Human Bond



Components of the Horse-Human Bond



- Working partners
- Companions
- Competition
- Therapeutics (human)













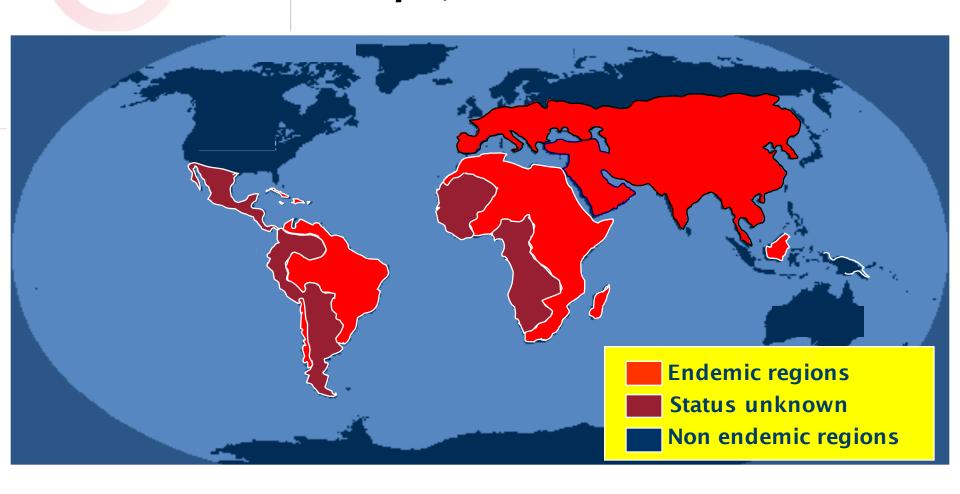




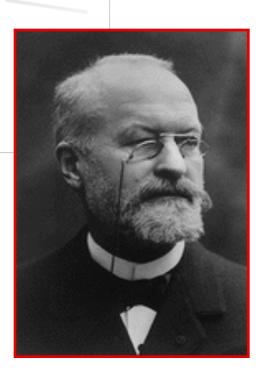
Foreign (Exotic) Animal Diseases



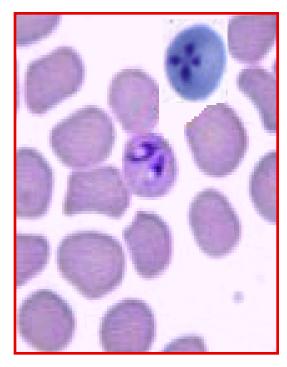
Equine Babesiosis (Piroplasmosis) - Tick Transmitted Babesia Equi, Babesia Caballi







- Institut Pasteur, Paris
- 1845-1922
- Piroplasma equi 1901



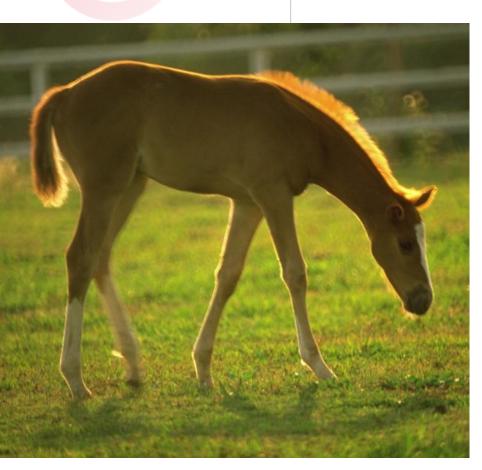
Equine babesiosis – overview of the disease How did the U.S. obtain the problem?



Factors influencing probability of equine babesiosis reaching threshold levels (leading to disease) within the United States

- Number of persistently infected horses imported
- Density of infected horses
- Presence of competent/infected ticks
- Density of infected ticks
- Countries which have transmission have clearly reached this threshold





- Infection of 250 horses with *B. equi* detected in southern U.S.
- WSU-ARS collaborative team requested to lead research effort in support of disease control

What are the problems concerning infection of horses with *B. equi?*



- Destroys red blood cells in the horse
- Horses that survive are source of transmission to other horses
- At first, in the U.S. few infected horses and ticks, so low dose and mild clinical disease



Babesia equi Transmitted by Ticks

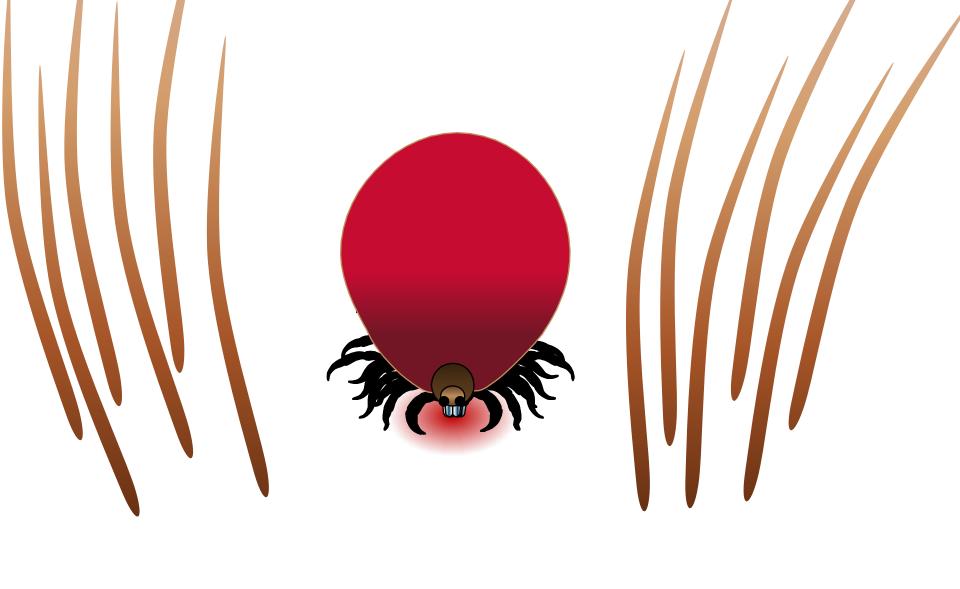
• Boophilus microplus, as an example

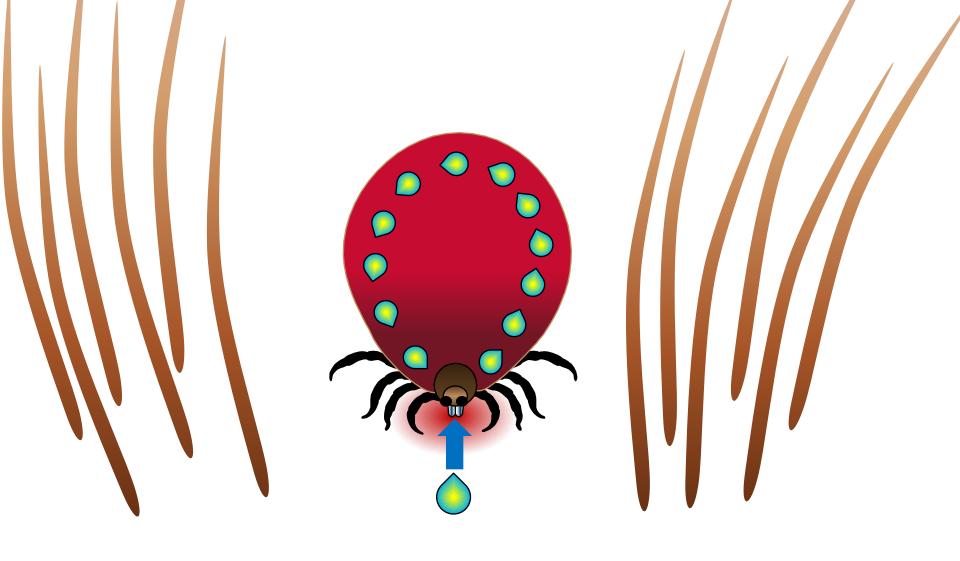






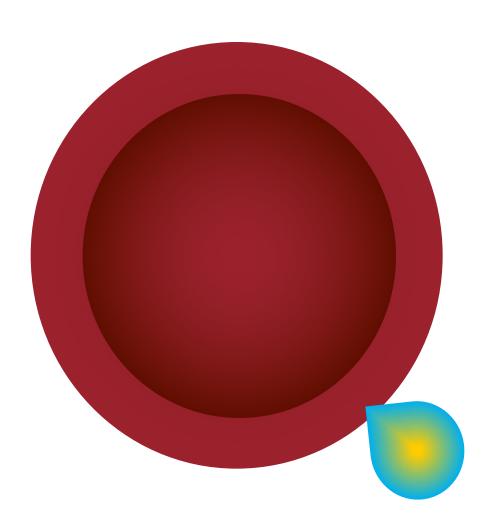


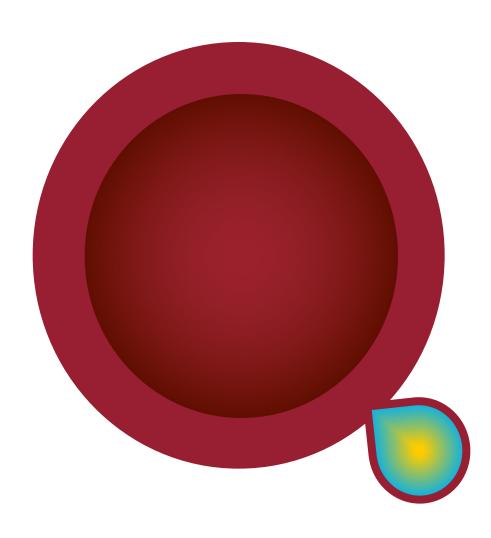


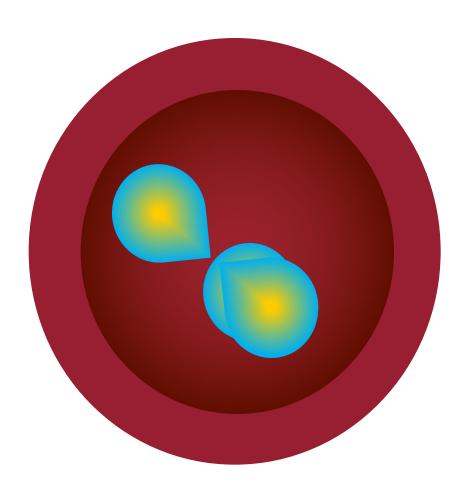


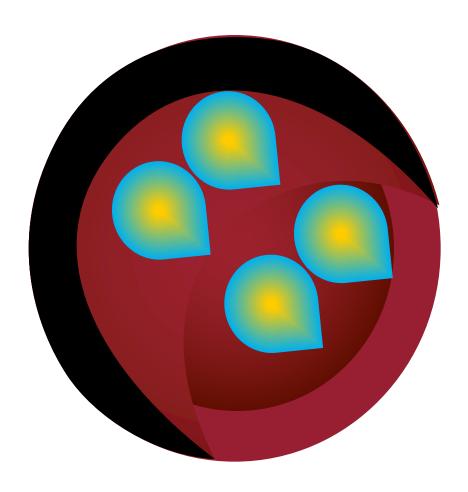


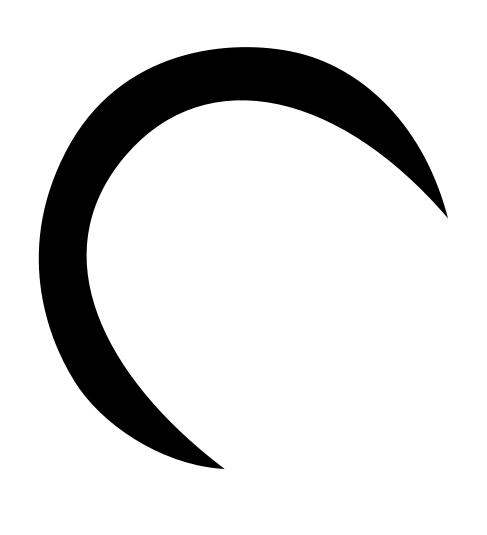


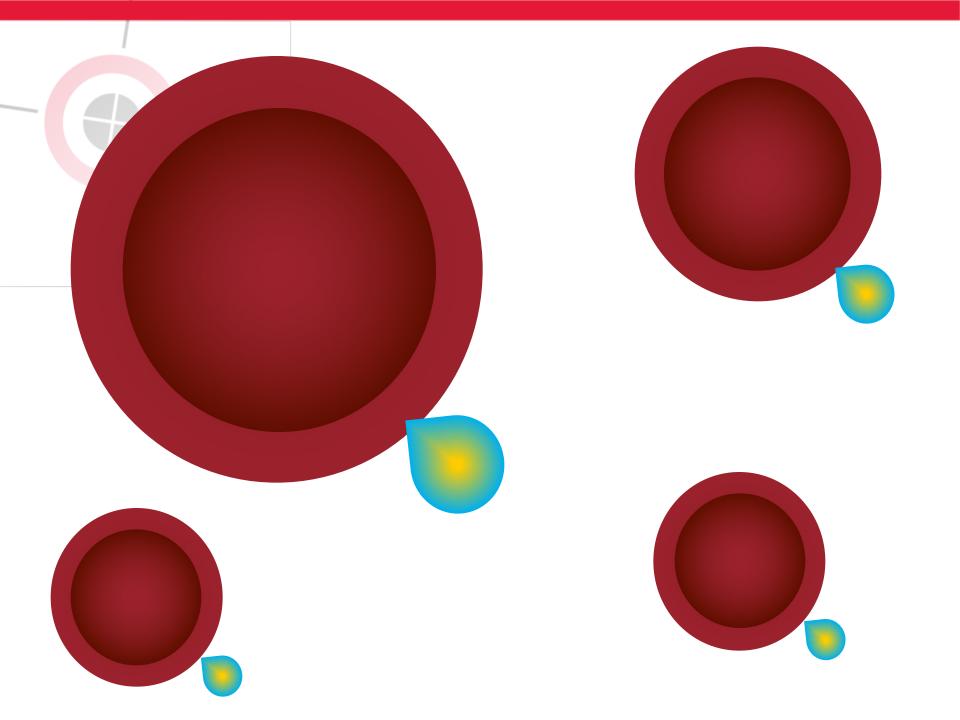


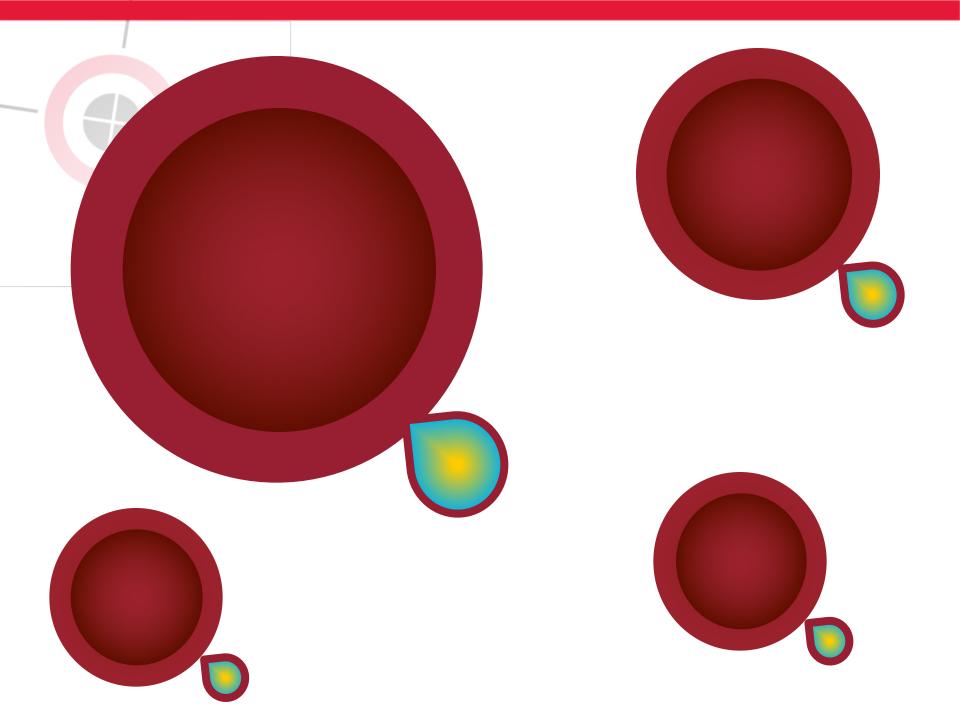


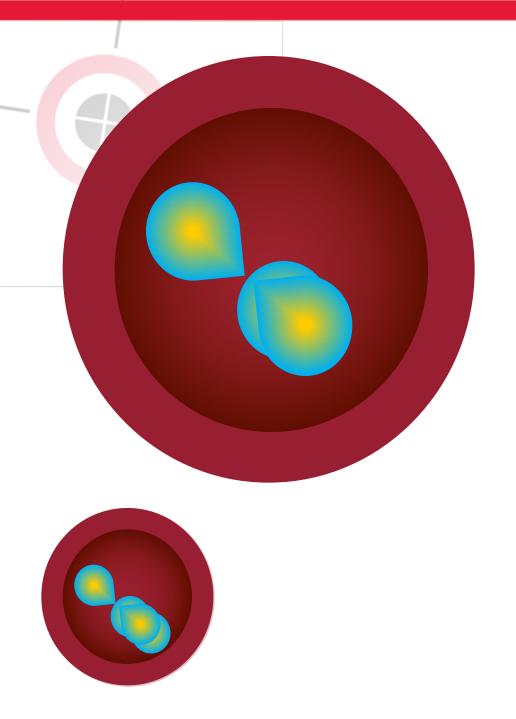


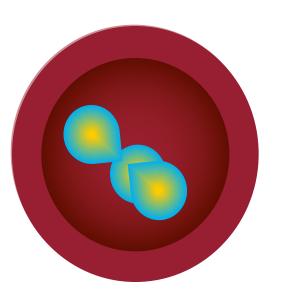


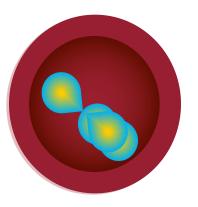


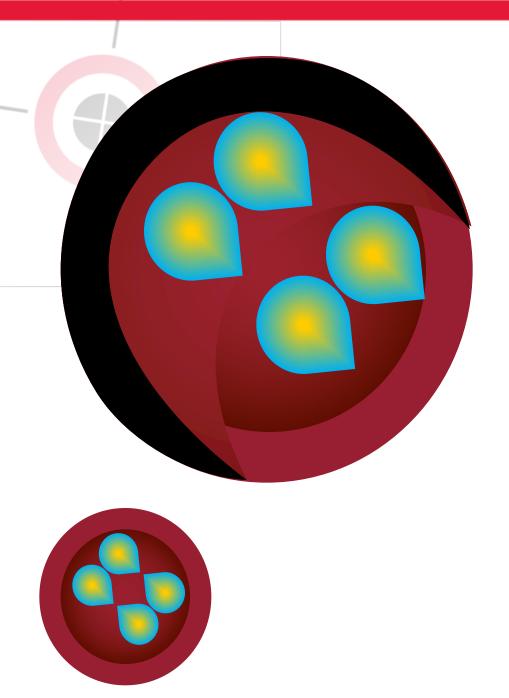


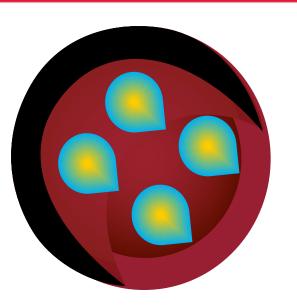


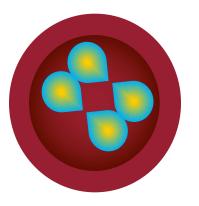




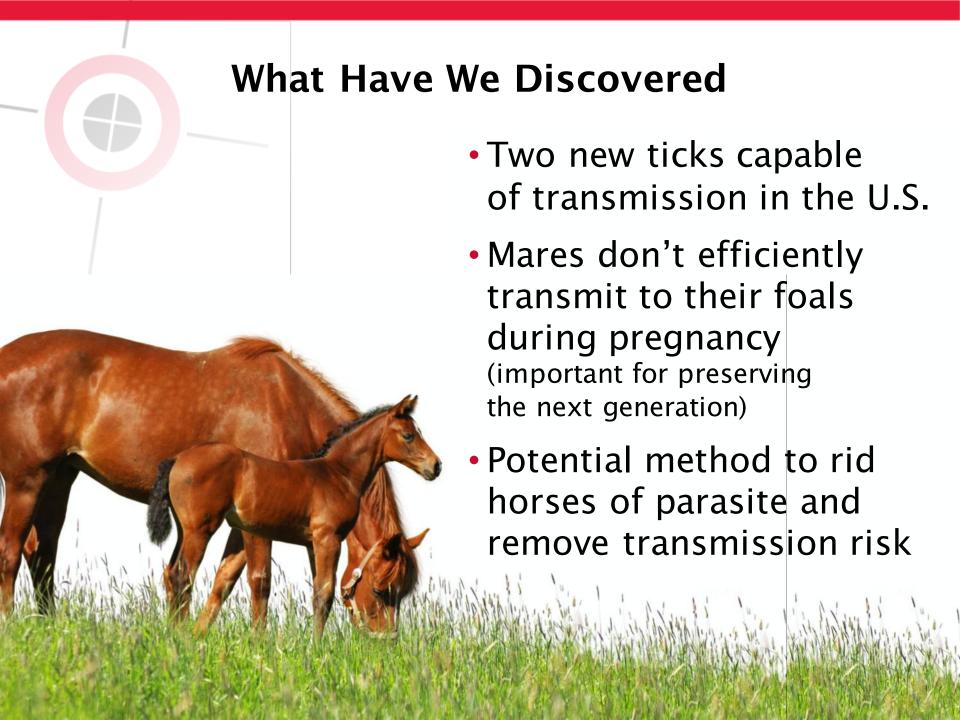














Newly discovered ticks capable of transmitting – why important?

- Piroplasmosis in horses is a non-contagious disease
- Ticks are primary transmitter of parasites









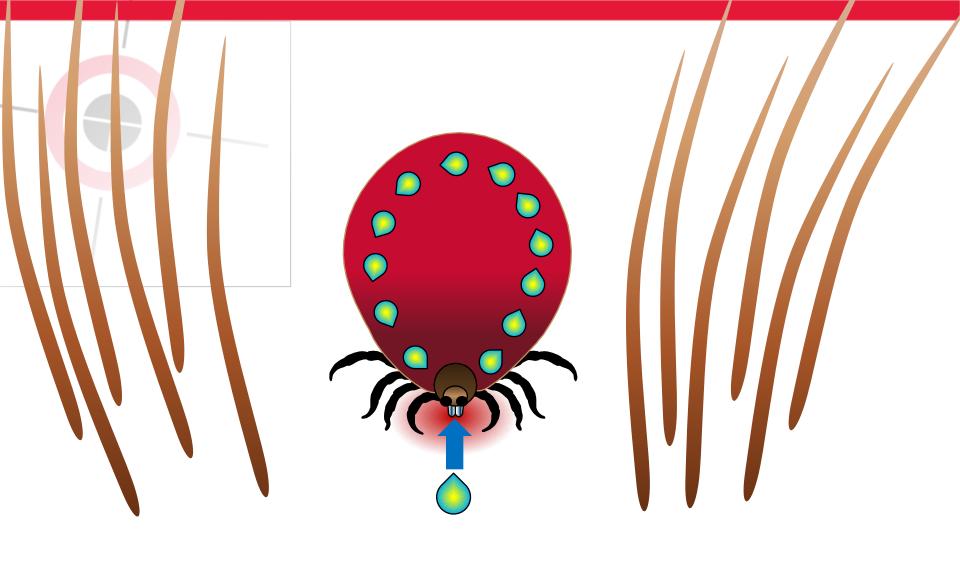
- Studying the status of foals born to infected mares
- Fortunately transmission to the foal in the uterus is inefficient
- Searching for measurements which predict which mares are at risk for transmitting to their foal





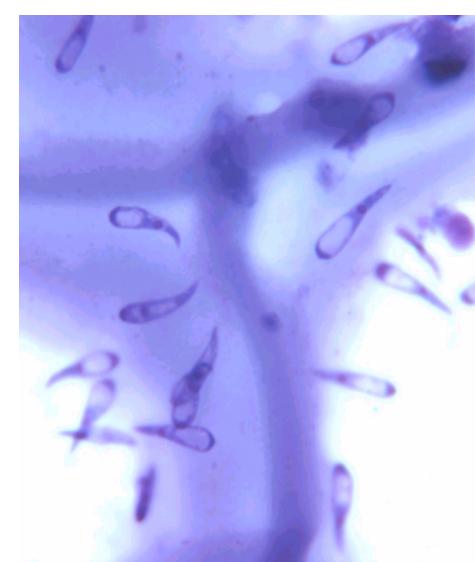
- Infected horses are a constant source of parasite for transmission to ticks and uninfected horses
- Initial data suggests some "strains" of B. equi can be removed (completely) from some infected horses using high doses of imidocarb











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VASHINGTON STATE UNIVERSITY

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