

Bovine Anaplasmosis

The Disease Syndrome of Anaplasmosis in Cattle

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INTRODUCTION

- Anaplasmosis is a blood disease of cattle characterized by extra vascular hemolysis of the red blood cells resulting in a severe and profound anemia often resulting in death of mature cattle. Animals that recover from a clinical case of Anaplasmosis are carrier for life and can act as a reservoir of infection of susceptible cows in the herd.

TRANSMISSION OF ANAPLASMOSIS

- Anaplasmosis is transmitted from infected or carrier animals by anything that can transmit blood from the infected or carrier animal to a susceptible animal.

TRANSMISSION VECTORS

- TICKS: Ticks are biological vectors. Ticks infected as nymphs remain infected through their molts to an adult.
- Ticks are very effective in the transmission of Anaplasmosis infection. The organism is located in the saliva glands of the tick and transmission occurs when the tick feeds.
- Dermacentor and Amblyoma species of ticks are the major species involved in Anaplasmosis transmission. Ixodes also play a minor roll in transmission.

MECHANICAL VECTORS

- Biting flies especially the horsefly are excellent transmitters of the Anaplasmosis organism. The Horsefly is a mechanical vector in as much as the mouth parts become contaminated with the Anaplasma organism when feeding on an infected or carrier animal and if it feeds on a susceptible animal within five minutes it can transmit the Anaplasma organism and infect the susceptible animal

MAN AS A VECTOR

- Man is also an excellent transmitter of Anaplasmosis by the use of non-sterile equipment on cattle. The use of a needle to inject an Anaplasmosis carrier animal and then using the same needle on a susceptible cow can transmit the disease organism. Dehorning instruments, tagging pliers, and non-sterile surgery equipment can also transmit Anaplasmosis.

Flies that are and are not vectors of transmission of Anaplasmosis

- Horn flies are not transmitters of Anaplasmosis. Short mouth parts don't penetrate through the skin.
- Stable flies are transmitters of Anaplasmosis. Long biting mouth parts penetrate through the skin.
- Mosquito????

INCUBATION PERIOD

- The usual incubation period is 21 to 28 days. During the first 21 days the red blood cells are being infected and the body's filter system picks out the infected red blood cells and destroys the cells. The cow is able to make red blood cells as fast as they are being destroyed early in the disease process. At about the 21 day the infection goes into a logarithmic stage and red blood cells become infected in mass numbers. These infected red blood cells will be removed from circulation and destroyed.

ANAPLASMOSIS DISEASE SYNDROME

- Bovine show no clinical Signs of anemia until 50% of their RBC have been destroyed.
- In Acute Anaplasmosis by the time clinical signs of anemia occur 40% to 60% of their remaining RBC's are infected and going to be destroyed.

DISEASE SYNDROME FROM THE OWNERS VIEW

- Clinical signs seen by the producer usually include: Rapid Weight Loss, Animal don't keep up with the herd and the animal will usually be standing apart from the herd with their necks extended with labored open mouth breathing to the point they can not eat or drink. The urine will be a dark yellow color and the white parts of the skin and mucous membranes will be a yellow or jaundice color.

CONTINUED OWNERS VIEW

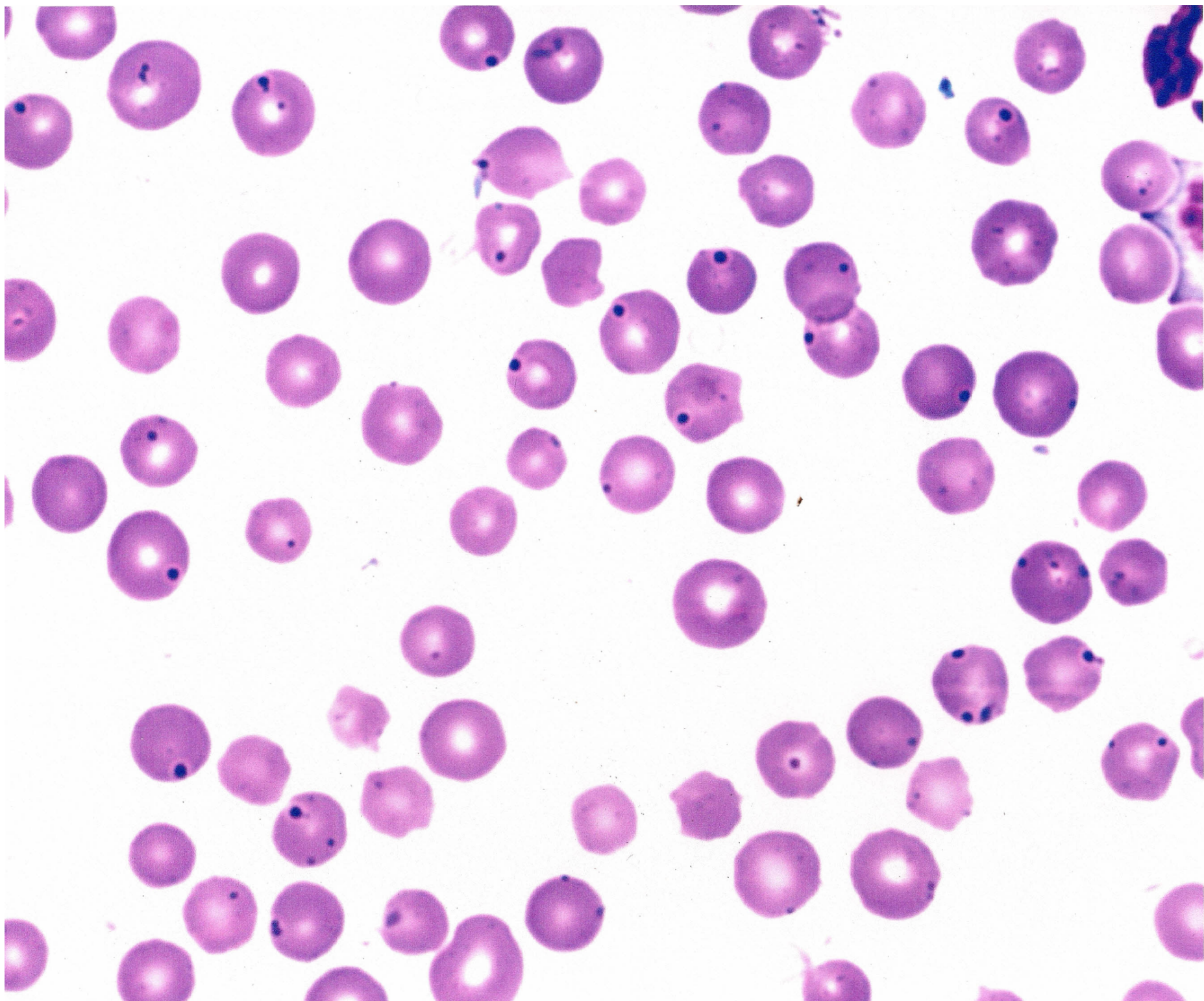
- Pregnant animals will usually abort and wet cows stop producing milk. Many animals will become aggressive and attack people or vehicles and many of these animals will fall and die because they do not have enough oxygen to serve the tissue.

CONTINUE OWNERS VIEW

- The infected animal becomes progressively dehydrated and the feces become hard and dry and covered with a mucous that has a green sheen. The animals breathing becomes more and more labored and eventually they go down and die.

DIAGNOSIS

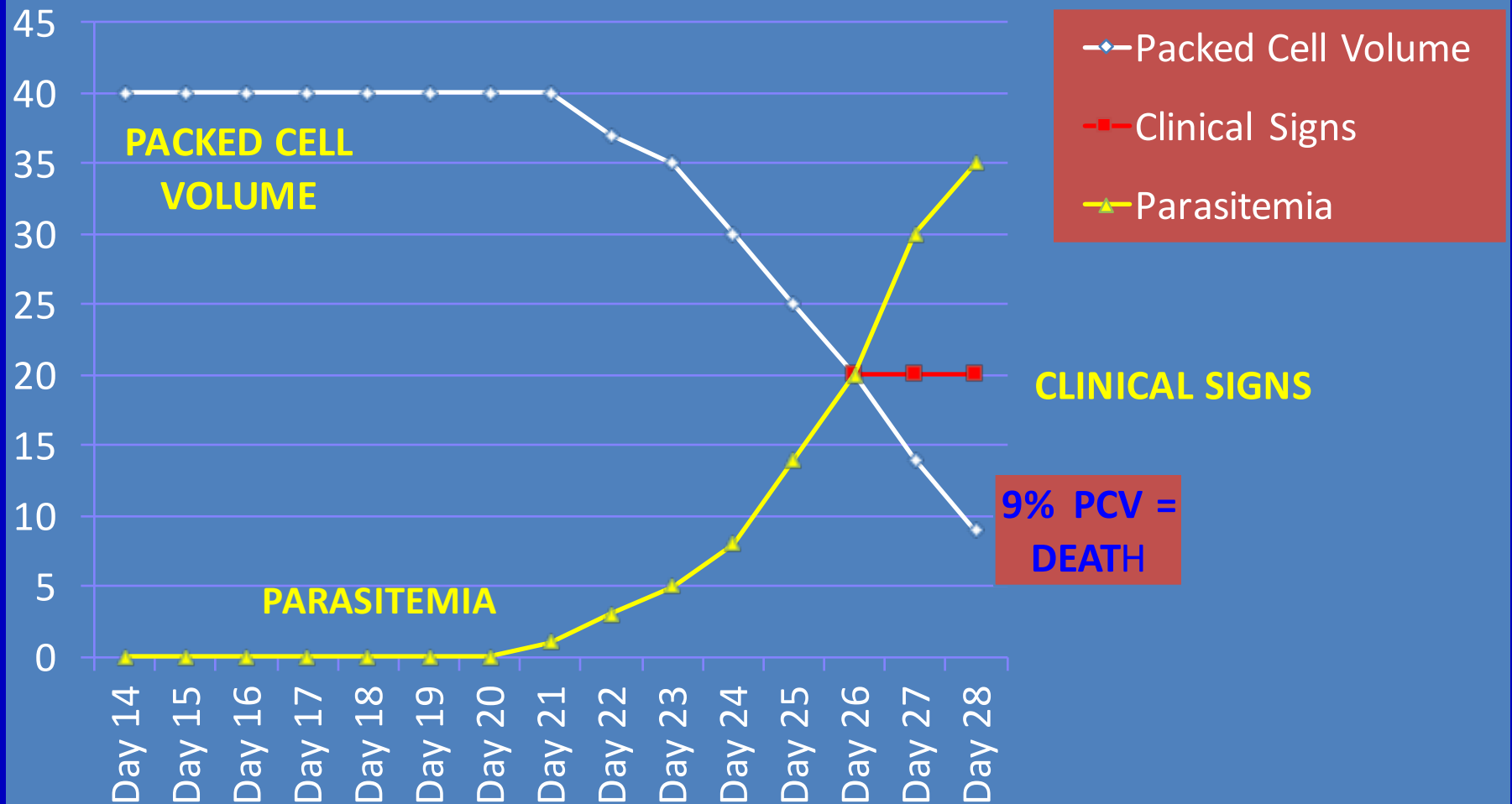
- Clinical signs of anemia and mass destruction of RBC's.
- Packed RBC Volume usually in low teens or single digit.
- Stained Blood smears with dark staining body on margin of RBC's.
- Serological ELISA Test for convalescent or carrier state.



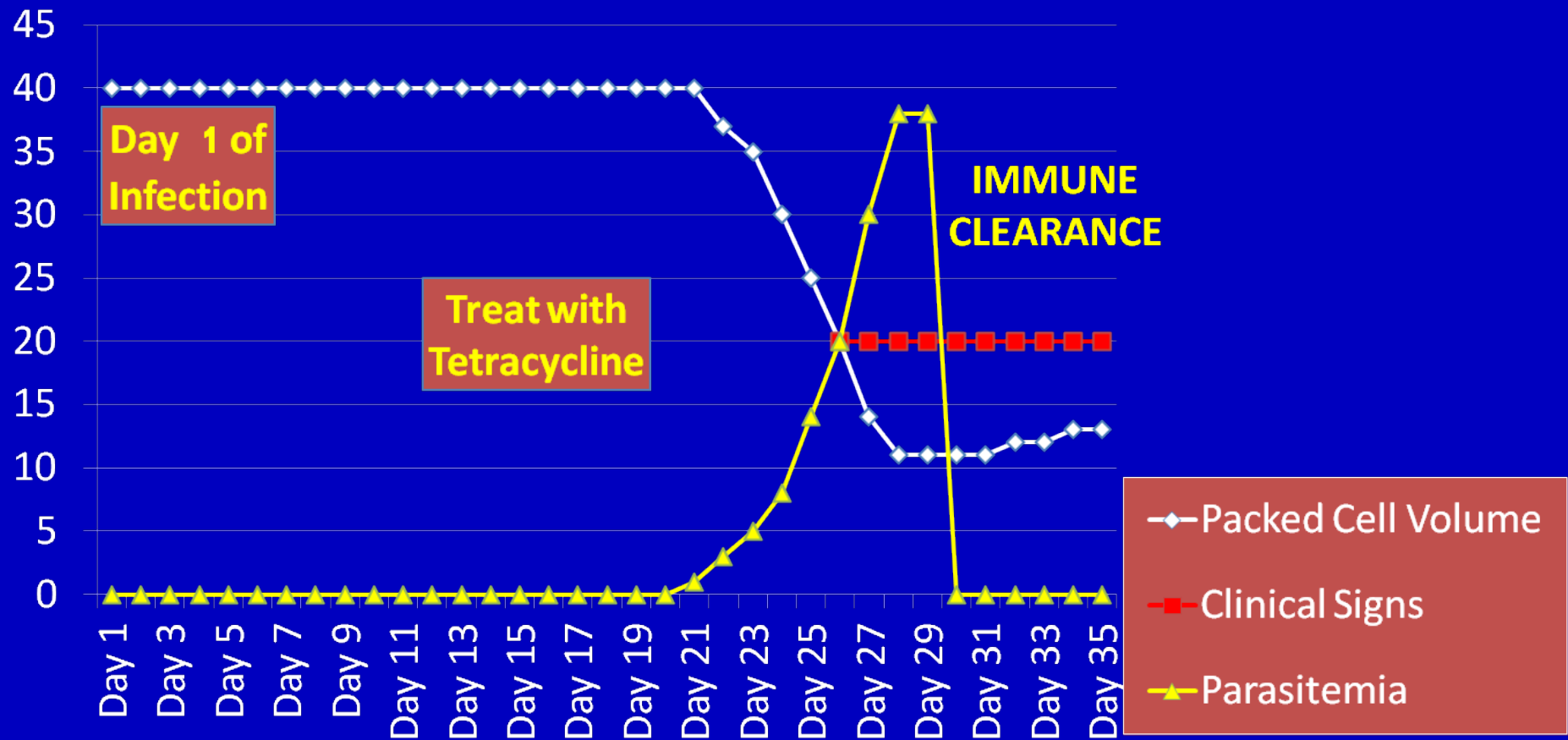
TREATMENT

- Tetracycline is an excellent Antibiotic for treating an acute case of Anaplasmosis.
WHEN YOU TREAT IN TIME.
- Treating animals with Anaplasmosis is very discouraging because by the time you diagnose the disease it is about too late to treat, unless you can transfuse.
- Blood transfusion 1 to 4 gallons.
- Treating Carrier State will not work and is a waste of time and money.

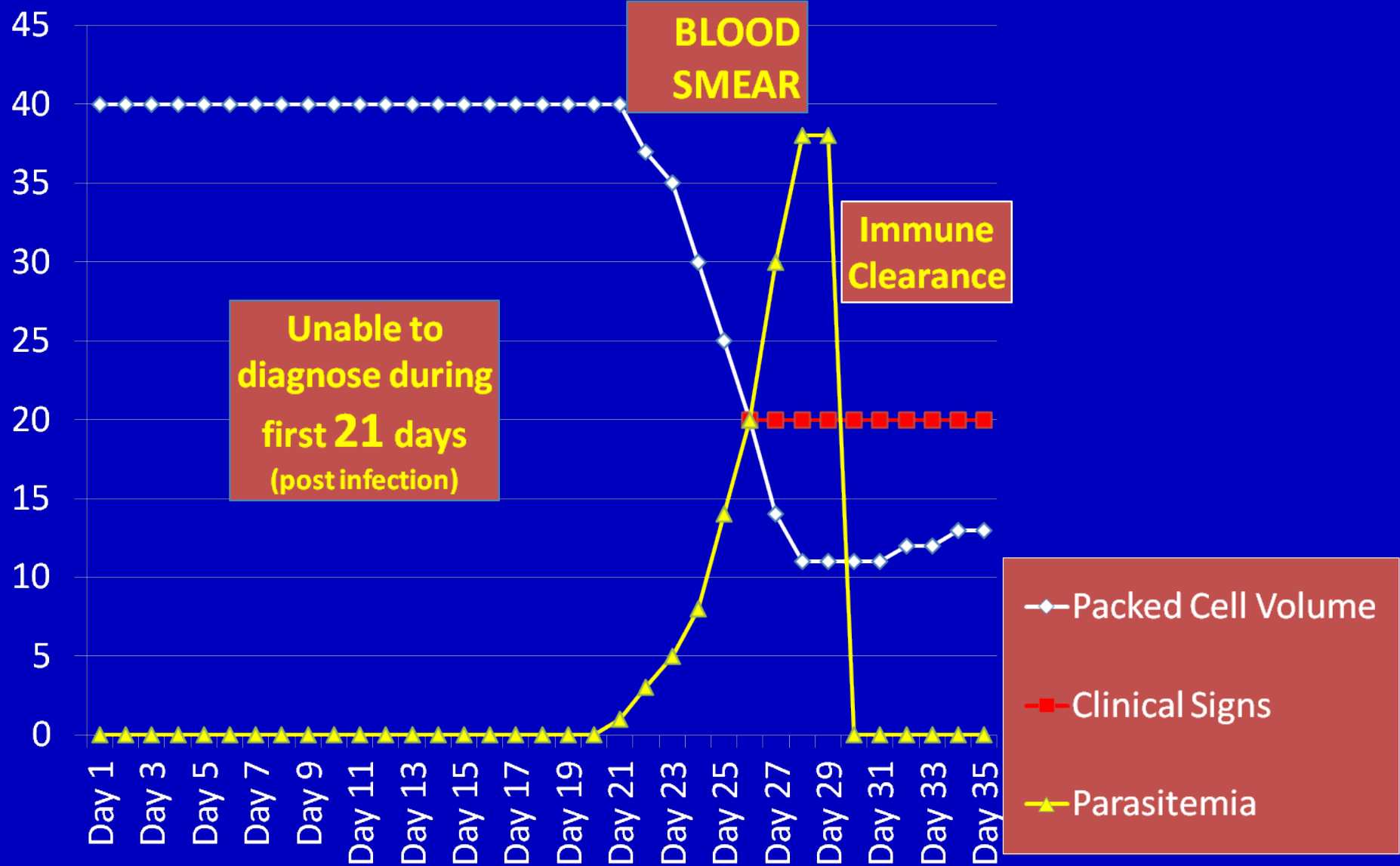
Anaplasmosis Disease



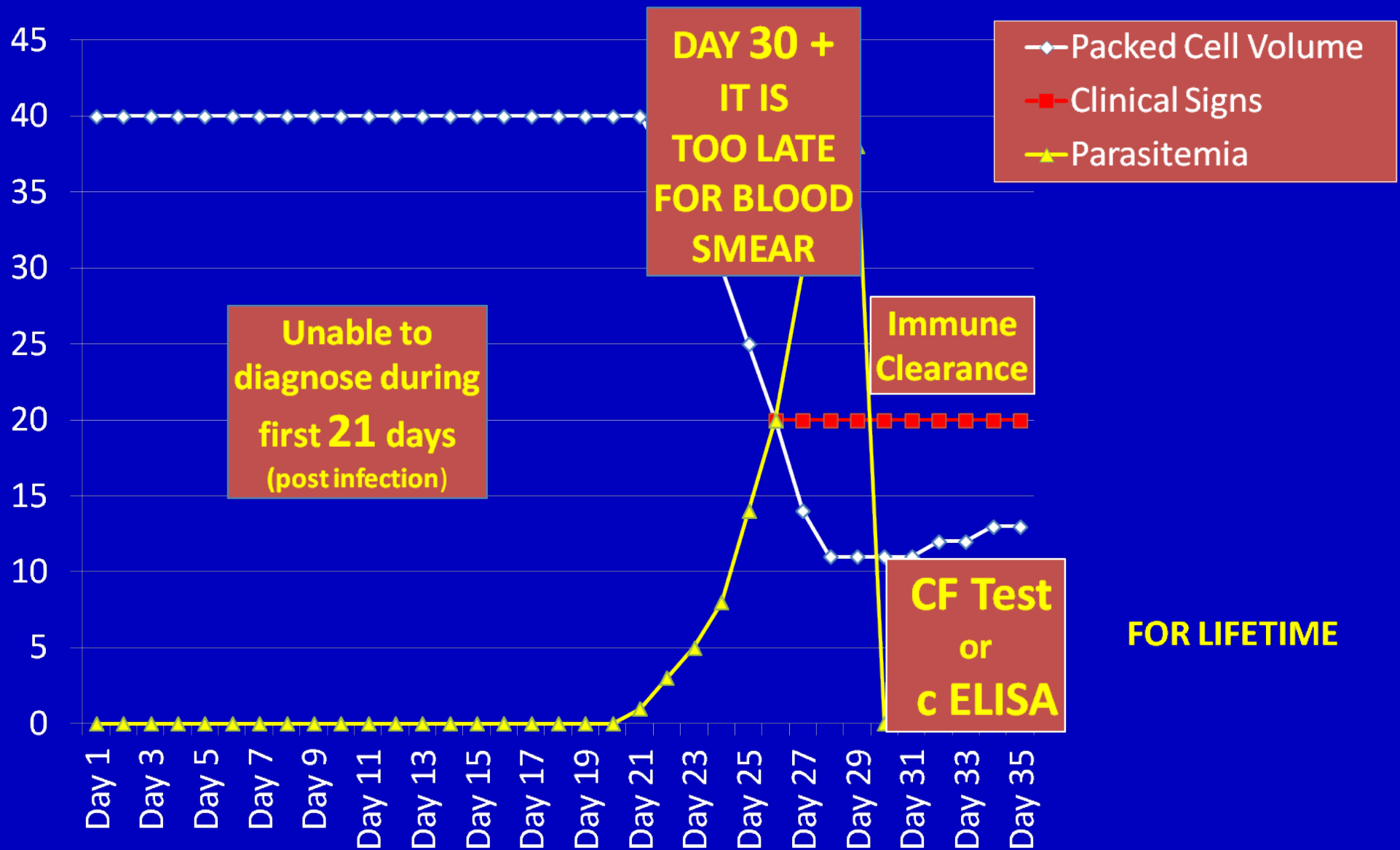
Disease Syndrome



Acute Anaplasmosis Diagnosis



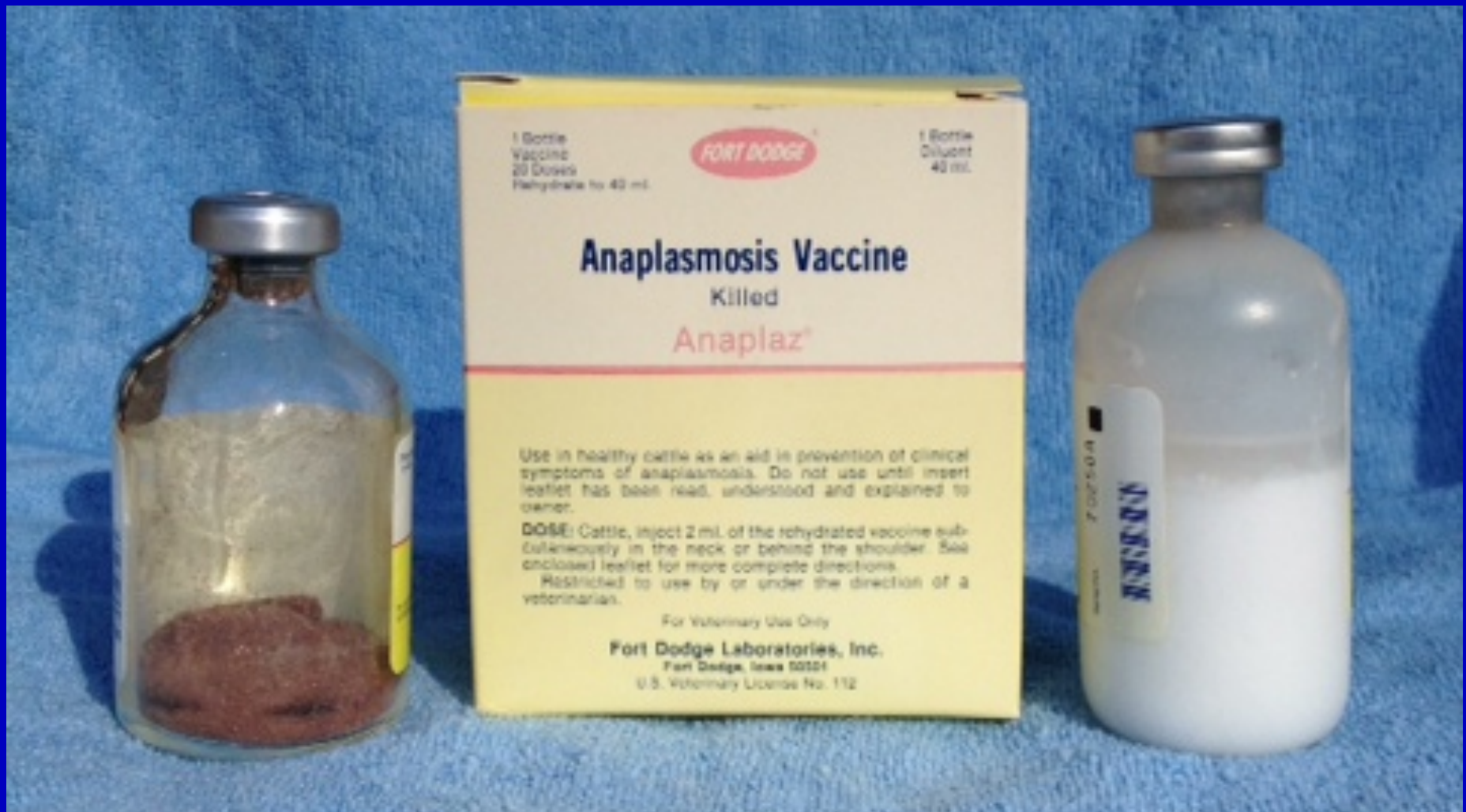
Anaplasmosis Diagnosis Convalescent & Carrier



University Products L.L.C. Anaplasmosis Vaccine



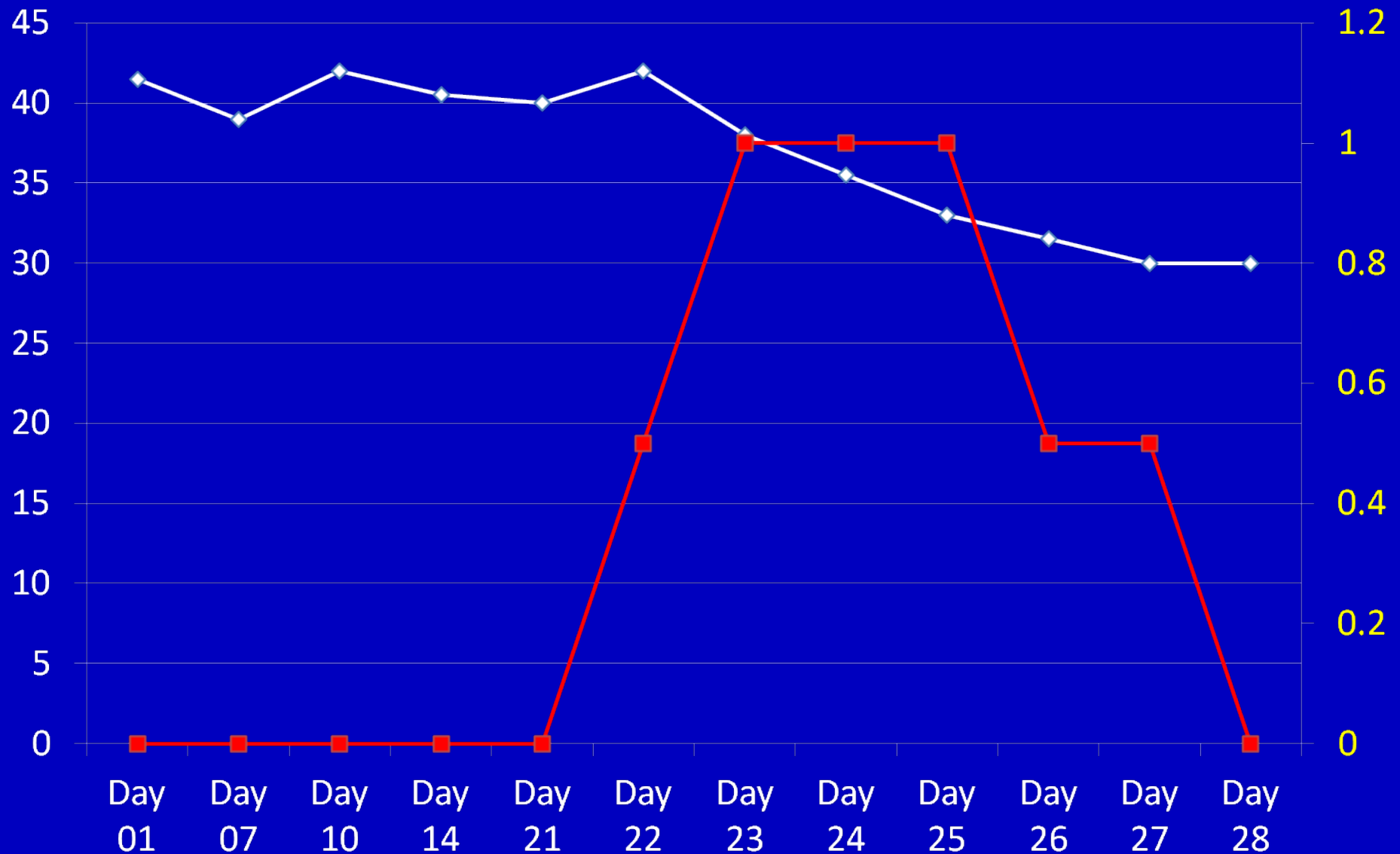
Fort Dodge Anaplaz Vaccine



Mallinckrodt's Plazvax



Can You Explain This Slide?



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Prevention and Control of Anaplasmosis

- Vaccination is the best means of preventing and controlling bovine Anaplasmosis.
- Feeding Tetracycline in Feed or Minerals. One problem with this is it doesn't work to protect the entire herd. With good pasture they will not eat enough to give protection.

ANAPLASMOSIS VACCINES

- California has a live vaccine “Anavac” that is available only in California and can only be given to animal under one year of age.
- University Products, L.L.C. has a killed Anaplasmosis Vaccine that has given good protection and caused no reported problems.
- There has never been a reported case of Neonatal Isoerytholysis (NI) in calves of vaccinated cows

Fort Dodge Anaplaz Vaccine

