

DEVELOPING
SAFE PROCEDURES FOR WORKING WITH
HORSES INFECTED WITH
VESICULAR STOMATITIS (VSV-NJ) IN AN AG
CONTAINMENT
FACILITY

Allison Liljedahl, MS, RLATG

The University of Georgia

1 7 8 5

Introduction

- Animal Health Research Center
 - Designed at ABSL3 & BSL3-Ag
 - Currently in “burn-in” phase
 - » Projects at ABSL2 enhanced
 - 2 large BSL3Ag rooms and 6 small BSL3Ag rooms



1 7 8 5

Previous VSV studies

- Vesicular Stomatitis Virus
 - Blisters on the mouth and the coronary bands
 - Vector-borne
 - Biting flies and gnats
- Cattle
 - Housed individually and in contact groups
 - Fairly low maintenance
- Pigs
 - Housed individually in cages



VSV in horses



www.aaep.org/horseowner

- Lesions on the coronary band & mouth
- Reportable to the state and federal animal health authorities
- Can cause the cancellation of equestrian events and quarantine of facilities
- In severe cases, the hooves of the animal may slough off

Horses in the AHRC

- 2 groups of horses to be used in the AHRC
 - 1 group of single housed horses
 - 1 group of group-housed horses for contact transmission
- Study conducted at ABSL-2 enhanced with ABSL-3 practices.

I 7 8 5

Pre-study Identified Concerns

- Horse Health
- Personnel Safety
- Pathogen Containment

I 7 8 5

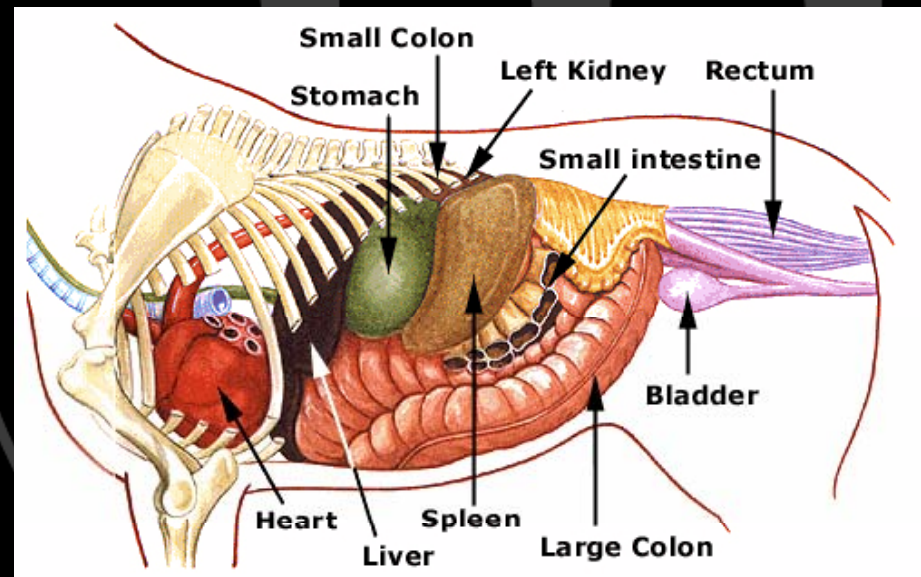
Horse Health Issues

- Horses are complex physiologically and emotionally
- Prone to gastrointestinal issues
- Competitive
- Nervous and flighty



Horse Health: Colic

- Literally means “abdominal pain”
 - Range of severity from mild to fatal
- Commonly due to stress and environmental or nutritional changes
- Difficult and complicated to treat in a containment facility



Horse Health: Horse-Horse Interactions

- Group housing can be very dangerous for both the caretakers and the horses
- Potential fights
- Separate if necessary
- Assess personalities before group housing



Potential Problem: Personnel Safety

- Horses can be nervous, flighty and unpredictable
- Average size is approximately 1000 lbs
- Mitigate risks by:
 - Training staff
 - Attempting procedures during acclimation to assess the horse's attitude and willingness to participate
 - "Buddy system" during the weekends
 - Acclimate horses to the PPE that will be worn in containment
 - Tyveks, N95s or PAPRs



1 7 8 5

Containment concerns

- Waste Disposal
 - Picking up waste and bagging vs. hosing waste down the drain
- Ensure animal & personnel safety in order to prevent any incidents
- Personnel quarantine

1 7 8 5

Acclimation period

- Assess Horse's behavior
- Acclimation to the diet
- Acclimate to personnel and personnel's PPE
- Train personnel and lab staff on handling

1 7 8 5

Acclimation Period cont.

- At least 1 week acclimation in an offsite facility
- Care for horses in the same manner and PPE to mimic containment conditions
- Performed procedures to assess the horses' willingness and attitude
- Housed individually in standard sized stalls with shavings

1 7 8 5

Pre-study meetings

- At least one meeting that included all lab staff, facility management staff, animal care and operations staff.
- Evaluate personnel's understanding of the project and prepare training sessions.
- Assure that everyone is on the same page
- Communicate each party's needs

Housing arrangements in the AHRC

- Fully matted floors
- Diet consisting of:
 - Bermuda grass hay
 - Equine Senior
 - Ad lib water
- Single housed
 - Shavings on the floors
- Group housed
 - No shavings
 - Floors hosed daily



Housing arrangements in the AHRC cont.



Single-housed Cohort

- 6 horses housed individually in separate rooms
- 1 week acclimation period
- Housed on matted floors covered in shavings.
 - Picked stalls daily and bagged manure for disposal
- Poor initial body condition and old in age



1 7 8 5

Group Housed Cohort



- 7 horses housed in groups in 2 large rooms
- >2 week acclimation
 - No group housing
 - Horse behavior and health issues

1 7 8 5

Group Housed Cohort cont.



- 2 incidents that required veterinary medical attention
- Horses subsequently separated into two sections of the room



Additional issues that we experienced

- Waste
 - High volumes and difficulties in removing
- Personnel quarantines
 - 5 day quarantine from livestock for VSV
- Cleaning
 - Hosing vs. Picking stalls



Waste Disposal



- Over accumulation of bagged waste
 - Waste still a problem even when hosing
- The incinerator was not available for use
- Waste disposed of through the tissue digester and EDS system



1 7 8 5

Lessons learned

- Communications between all parties is key
- Be flexible
- Select horses carefully for body condition and temperament
- Document all new situations with photographs
- Attempt to acclimate animals in a way that closely mimics the housing of containment

1785

Final Comments

- Horses are unpredictable!
- Mimic “real life” as much as possible
- Acclimation for success!!!
- Staff Training is absolutely necessary

1 7 8 5

Acknowledgements

- Vicki Ellis, RALAT
- Heather Chapman
- Tom Buckner, LATG
- Dr. Steve Harvey, DVM
- Dr. Danny Mead and his lab staff
- The Facility Management team at the AHRC
- The Vet Med Animal Resources Crew

1 7 8 5