

Sampling Locations

Collecting environmental samples is a way to proactively monitor for pathogens of interest within a feed mill and surfaces associated with feed delivery. Previous research has demonstrated that objects or people involved feed mill or feed delivery contribute to the spread of pathogens like African swine fever virus, porcine deltacoronavirus, or porcine epidemic diarrhea virus (Gebhardt et al., 2021; Elijah et al., 2022). There a multitude of surfaces that could be sampled within a feed mill so it can be overwhelming to decide where to focus sampling efforts. Therefore, this factsheet aims to provide a list of surfaces based on zone that have been shown to potentially harbor pathogen of interest.

Feed Contact Surfaces

Feed contact surfaces have direct contact with feed ingredients or complete feed. These surfaces are associated with feed manufacturing, storage, and delivery. If these surfaces are positive for pathogen of interest, its origin may have been from a contaminated feed ingredient.

Surfaces associated with the feed mill	Surfaces associated with feed delivery
Corn cleaner	Interior of feed truck compartments
Receiving pit grates	Interior of feed truck boom
Fat intake inlet or hose	
Interiors of feed bins	
Load out auger or sock	
Interiors of bucket elevators	

Non-Feed Contact Surfaces

Non-feed contact surfaces are surfaces with a fixed location that are close or next to feed contact surfaces. These surfaces are either covered by dust from feed manufacturing or have a lot of foot traffic. If these surfaces are positive for pathogen of interest, its origin may have been through a contaminated feed ingredient dust generated during feed manufacturing or transient surfaces contributing to the spread of the contamination.

Surfaces associated with the feed mill	Surfaces associated with feed delivery
Floor of load out bay	Exterior of feed truck compartments
Control room floor	Exterior of feed truck boom
Floor mat by main entrance	
Receiving floors	
Manufacturing floors <ul style="list-style-type: none"> ▪ Floors around hand add ports ▪ Areas near sample ports 	
Warehouse floors	
Exterior of pellet mill	
Pellet mill air intake	
Inside dust collection system	

Transient Surfaces

Transient surfaces are surfaces with a non-fixed location and can move within the feed mill or during feed delivery. These surfaces have intermittent contact with other surfaces that could potentially have exposure to pathogen of interest. If these surfaces are positive for pathogen of interest, its origin may have been through employees introducing or spreading the contamination.

Surfaces associated with the feed mill	Surfaces associated with feed delivery
Fork lift tires	Feed truck steps
Broom	Feed truck floor mat and pedals
Shovels	Feed truck tires
Worker shoes	Workers shoes
Worker clothing	Workers clothing

References

- Elijah CG, Harrison OL, Blomme AK, Woodworth JC, Jones CK, Paulk CB, and Gebhardt JT. (2022). Understanding the role of feed manufacturing and delivery within a series of porcine deltacoronavirus investigations. *J Swine Health Prod.* 30(1):17-23.
- Gebhardt JT, Dritz SS, Elijah CG, Jones CK, Paulk CB and Woodworth JC. (2021). Sampling and detection of African swine fever virus within a feed manufacturing and swine production system. *Transbound Emerg Dis.* 69:103-114. doi:10.1111/tbed.14335