

BOX STALL SANITATION

1. PURPOSE

A box stall or a pen allows a cow/heifer to move freely in a comfortable, enclosed area. It can be used to house a sick or injured animal, a cow/heifer that is recovering from surgery or injury and house cattle pre-and post-partum, or a cow/heifer that needs monitoring.

Maintaining a clean box stall is essential in keeping the animal clean and thereby reducing the spread of environmental pathogens to the teat canals, injuries, and surgical wounds or to a newborn calf.

2. RESPONSIBILITY

- 2.1 Trained personnel
- 2.2 Dairy Barn Manager

3. MATERIALS

- 3.1 Wheelbarrow
- 3.2 Pitchfork
- 3.3 Shovel
- 3.4 Broom
- 3.5 Wood shavings
- 3.6 Paper bedding
- 3.7 Straw
- 3.8 Limestone
- 3.9 Virkon® (or equivalent)
- 3.10 Gloves
- 3.11 Mask

4. GENERAL

- 4.1 Box stalls are thoroughly cleaned daily (preferably in the morning).
- 4.2 Cleanliness is maintained frequently throughout the day by removing soiled bedding.
- 4.3 Evening (usually after milking): Manure is cleaned out and existing bedding is spread evenly. More bedding is added, if necessary.
- 4.4 Assess the cleanliness of the animal to determine if a box stall has an adequate level of cleanliness. Appropriate corrective action must be taken when the level of cleanliness is inadequate. Refer to SOP [DC-304: Dairy Cow Cleanliness Assessment](#).
- 4.5 Box stalls must be disinfected between animals, if the previous occupier was isolated due to a contagious condition (refer to Section 5.2).
- 4.6 Box stalls which have been exposed to cows with contagious infections (e.g., *Staphylococcus aureus*, toxic mastitis, diarrhea, *Klebsiella*, etc.) MUST follow specific disinfection procedures (section 5.3).

5. PROCEDURE

5.1 BOX STALL DAILY CLEANING:

- 5.1.1 Tie the cow/heifer to the side of the pen if necessary, using a halter to prevent escape.
- 5.1.2 Remove all manure paddies, bedding that has been soiled with urine or manure, wet bedding under the water bowl, feed ration, and soiled hay, using a pitchfork and shovel. Move the bedding around because soiled bedding and manure might be hiding underneath clean bedding.
- 5.1.3 Place all soiled bedding into the wheelbarrow.
- 5.1.4 Dump the soiled bedding in the solid manure chain gutter at the opposite end of the barn.
- 5.1.5 Start the chain gutter. (Fig. 1)
- 5.1.6 Empty the wheelbarrow.
- 5.1.7 Stop the chain gutter before going back to the box stall.
- 5.1.8 Spread out remaining clean bedding. Add more wood, paper, and straw to provide a thickness to a minimum depth of 15 cm. (Fig.2)
- 5.1.9 The bedding should not impede the opening of the gate and is kept clear of the feed bin and water bowl.



Figure 1: Chain Gutter Controls

5.2 BOX STALL DISINFECTION:

Box stalls must be disinfected between animals if the previous occupier was isolated due to a contagious condition.

- 5.2.1 Remove all soiled and wet bedding.
- 5.2.2 Wash the back wall by scrubbing with dish soap and hot water.
- 5.2.3 Scrape any bedding stuck to the mat.
- 5.2.4 Sweep out all remaining bedding.
- 5.2.5 Don mask, eye protection, and gloves.
- 5.2.6 Prepare the Virkon® (or equivalent) per manufacturer instructions.
- 5.2.7 Disinfect the stall with Virkon® (or equivalent)
- 5.2.8 Allow to air dry.
- 5.2.9 Sprinkle limestone (Wear gloves and a mask).
- 5.2.10 Spread out the remaining clean bedding. Add more wood, paper, and straw to provide a thickness to a minimum depth of 15 cm. (Fig.2)
- 5.2.11 The bedding should not impede the opening of the gate and is kept clear of the feed bin and water bowl.



Figure 2: Clean Box stall

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5.3 CONTAMINATED BOX STALL DISINFECTION:

IMPORTANT

Box stalls that have been exposed to cows with contagious infections (e.g. Staphylococcus aureus, toxic mastitis, diarrhea, Klebsiella, etc.) MUST be disinfected with Virkon® and limestone.

- 5.3.1 Remove all remaining bedding and dump in solid manure chain gutter.
- 5.3.2 Wash the back wall by scrubbing it with dish soap and hot water.
- 5.3.3 Scrape any bedding stuck to the mat.
- 5.3.4 Sweep out all remaining bedding.
- 5.3.5 Don mask, eye protection and gloves.
- 5.3.6 Prepare the Virkon® (or equivalent) per manufacturer instructions.
- 5.3.7 Disinfect the walls, bars, and mat with Virkon® (or equivalent).
- 5.3.8 Allow to air dry.
- 5.3.9 Sprinkle limestone.
- 5.3.10 Leave the stall empty, ideally for a minimum of 24 hours.
- 5.3.11 Spread 1-2 bags of wood shavings and 1-2 bags of paper shavings evenly over the floor to provide a thickness to a minimum depth of 15 cm. (Fig. 2).
- 5.3.12 The bedding should not impede the opening of the gate and is kept clear of the feed bin and water bowl. (Fig. 2)

6. REFERENCES

CCAC guidelines on the care and use of farm animals in research, teaching, and testing. Canadian Council on Animal Care, 2009.

Document Status and Revision History

| DATE | STATUS |
|-------------|---|
| 2-May-2018 | VERSION 01: New SOP MacDonald Campus FACC approved |
| | 3.6 add "paper towel" 5.1.2 Replace "Remove all the manure and urine using a pitchfork and shovel." With "Remove all manure paddies, bedding that has been soiled with urine or manure, wet bedding under the water bowl, feed ration, and soiled hay, using a pitchfork and shovel." 5.1.7 Replace "When all soiled bedding has been removed, spread out any remaining clean wood shavings and paper bedding.. Add more wood shaving and paper bedding to provide a thickness of at least 1 inch1inch." with "Spread out remaining clean bedding and add more wood and paper shavings as needed to provide a thickness of at least 1 inch leaving a ~1m border along the two sides of the stall with gates." 5.1.8 Remove "wood" Deleted 5.2.3: Any clean wood shavings and straw can be placed in a clean corner of the box stall, to be reused. Added 5.2.5: Disinfect the stall with Virkon. 5.2.9: Change 1 ½- 2 bags to 1-2 bags. Deleted: "The bedding that has been kept from the previous cow can be spread evenly over the floor" Delete 5.3.5 Allow to air dry 5.3.9 Added Figures 1 & 2 |
| 20-Jul-2023 | VERSION 02: Macdonald Campus FACC approved |