

Proper performance of continuous sampling using a MicroTally swab and removable cartridge for a combo receiving 2000-lb of beef trimmings.

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1. The continuous sampling device (CSD) refers to using the MicroTally– sampling swab fixed in a removable cartridge and inserted into a permanently mounted baseplate at a combo bin fill station. The trim is sampled as it slides across the MicroTally swab before falling into the combo. Please see below for detailed mounting instructions.
2. Individual plants will need to develop specific procedures for washing and sanitizing the cartridges prior to loading the MicroTally swab. Several cartridges should be preloaded and stored aseptically to accommodate rapid sample change.
3. While the conveyor is either stopped or diverted to another sampling station, slide the assembled sampling cartridge into the stainless-steel baseplate from either end.
4. After the cartridge is in place, the conveyor line can be restarted or diverted to the new combo for filling. The swab collects the sample as the combo bin fills. After the combo bin is full and the conveyor line is stopped or diverted, remove the cartridge from the holder.
5. Install a new preloaded cartridge into the holder so the line can be restarted as soon as a new combo bin is in place.
6. Individual plants will need to develop specific procedures for sanitary handling of the cartridges and removal of the swab after sample collection. All plant-specific protocols should include the following procedures:
 - a. Place the cartridge on a sanitized flat surface.
 - b. Disassemble the cartridge to remove the swab. For disassembly, take care that only the plastic frame of the cartridge is contacted and not the MicroTally swab.
 - c. Sanitize gloves appropriately using alcohol sanitizer **without Quat**.
 - d. Ensure there is no excess sanitizer on gloves before handling the MicroTally swab.
 - e. Using caution to not cross contaminate the MicroTally swab, remove the MicroTally swab from the cartridge.
 - f. Refold the MicroTally swab and return to original bag. Close and label the sample bag unless pre-labeled.
 - g. Send samples to lab for processing.
7. At the lab, add 200 ml of bacterial growth media to the sample bag containing the swab and stomach for 30 sec.
8. Sample enrichment incubation times and temperatures will be in accordance with pathogen detection test platform validation procedures.

The above procedure is to ensure that the method is carried out properly in each plant that chooses to implement the technology. A CSD demonstration video can be found at

<https://www.fremonta.com/microtally>.

Verification of CSD sampling

As with the previous beef trim sampling methods (N60 excision and N60 plus), steps should be taken to verify that the CSD sample is consistently collected in a proper manner. Procedures to be used in CSD verification likely will include some combination of the following procedures.

1. Ensure baseplate is mounted in a manner that the trim slides over the MicroTally swab for collection of an adequate sample.
2. Sample weight baseline. Each plant should record the weights of each CSD MicroTally swab and determine weight variation to monitor CSD sample collection procedures. It is recommended to keep a running database of CSD weights as process control for each individual combo fill station to ensure that adequate samples are being collected with the CSD.

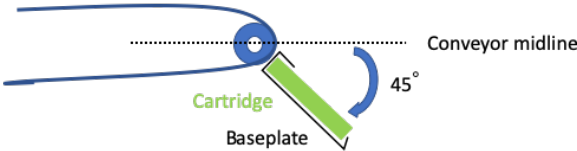
Note: samples weights will vary depending on lean point of the product sampled.

Standard CSD Mounting

1. Standard mounting: Mounting of the CSD under a conveyor without a pre-existing chute/slide, the baseplate should achieve a 45-degree angle from horizontal. When connecting the CSD baseplate to a preexisting chute/slide, the CSD should be mounted so that the CSD has a 10-degree shallower angle from the horizontal than the chute/slide to ensure the trim is impacting the sampling swab adequately (Figure 1).
2. Mounting must result in good contact of the trim on the MicroTally swab by allowing the meat to slide across the sampling cartridge. There are a several factors that will impact the degree of contact between the trim and the CSD and may need to be adjusted to achieve adequate contact.
 - a. Belt speed must not be so fast that the trim is propelled over the CSD without making adequate contact.
 - b. If mounted to a chute/slide, the length and steepness of the chute/slide are important. As the length and steepness increase, the speed of the trim pieces increases and may not result in adequate contact with the CSD. Hence, the angle of the CSD may need to be offset from the chute/slide by more than 10-degrees.
3. The baseplate can be modified as needed to facilitate mounting. Key considerations are:
 - a. Baseplate must be accessible for cartridge insertion from at least one side. On an unmodified baseplate, the cartridge slides in and out from either side. If modification for mounting is required, one side must remain accessible for cartridge insertion/removal.
 - b. Care should be taken during welding that the baseplate is not warped. The top portion of the baseplate acts as a clamp on the cartridge to apply pressure for holding the MicroTally swab securely. The bottom lip of the baseplate prevents the cartridge from sliding out of the “clamp”. Warping of either of these will result in a less secure grip on the MicroTally swab.
 - c. When mounting a baseplate via weld, make sure no metal burrs remain on the interior of the baseplate that will scrape the cartridge and potentially cause a foreign material issue.

Figure 1. CSD Mounting Diagram

CSD Direct Conveyor Mount



CSD Mount from Chute/Slide

