Preharvest Sampling of Romaine Lettuce Using a MicroTally® MicroBroom™ Sampler

Introduction

The **MicroTally® MicroBroom™ Sampler** (Catalog Number: MT-MR100) is a manual sampling device (MSD) that is also suitable for automated use. For manual use, it is generally used with an extension handle to which the sampler is attached to facilitate use. Its design and use make it suitable for attachment to automated sampling devices. It is specifically designed for penetrative sampling where surface sampling is inadequate or hard to execute due to physical constraints. Preharvest sampling of Romaine Lettuce is such a case. The interior or heart of the head needs to be sampled and is not readily reached with non-penetrative sampling procedures. After sample collection, the MicroBroom Sampler facilitates downstream microbiological analysis for pathogen detection and indicator testing, offering an efficient alternative to direct food product testing. Accurate and reliable sampling results depend on strict adherence to standard manual sampling protocols. This user manual focuses on the proper sampling procedures for preharvest Romaine lettuce using a MicroTally® MicroBroom™ Sampler. For additional instructions and applications for the MicroBroom Sampler, please contact FREMONTA Corp or visit www.MicroTally.com. Training videos can also be found on FREMONTA's YouTube channel.

Important Notices

- The MicroTally® MicroBroom™ Sampler is sterile and packaged in a 55oz bag. After sampling, return the sampler to the original bag. The rigid support should be removed at this time by snapping the shaft.
- Use one MicroBroom™ Sampler per aggregated sample.
- The MicroBroom™ Sampler generally does not need to be pre-moistened for penetrative sampling of romaine lettuce.
- Apply a vigorous, aggressive scrubbing technique in the interior of each head without collecting soil.
- Sample each head for 10 seconds to provide for sufficient transfer to the sampler.
- A common mistake is insufficient contact with the interior of each head.
- Avoiding soil contact is especially important for samples that will be analyzed for targets in addition to pathogens.

Preparation

Prior to entering the field to be sampled, prepare as follows for manual sampling:

1. Prepare data tracking system including attaching barcode labels if used or prepare manual data tracking forms if being done manually.
2. Prepare as required by the company's GAP/GMP program for entry into the field.
3. Organize sampling supplies (gloves, samplers, sanitizer, extension handle, etc.)
4. Samplers are not generally pre-moistened for this type of sampling.

Sampling Procedure

1. Assemble the sampling supplies.
2. Identify the area to be sampled and plan the pattern for the sampling.
3. Collect any meta-data for the lot.
4. For each sample if using barcodes, scan the barcode or record the barcode for sample tracking.
5. Don gloves and sanitize gloves appropriately with alcohol based sanitizer.
6. Remove the perforated top from the MicroTally® MicroBroom™ Sampler bag, open it, slide sampler to the top of the bag, and attach extension handle by inserting the shaft into the chuck and tightening it. Avoid dropping the tear strip by properly securing it.
7. Do not allow the sampler to touch anything before sampling commences.
8. Select the first head of Romaine lettuce to be sampled and move sampler over the center of the head

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and push down into the core of the head while rotating the sampler to maximize sampler contact with the interior tissue for about 10 seconds. Avoid contacting the soil.

9. It is generally desirable to have a second person, cut the lettuce head and place it in the furrow to avoid future harvest of the sampled head.
10. Move on to the next head and repeat the piercing sampling process for total of 60 heads.
11. Using the plastic rod return the MicroBroom™ sampler to the original bag without touching the cloth portion. Pinch the cloth sampler through the bag and remove the visible portion of the rod from the sampler by snapping the shaft against a hand while in the bag.
12. Securely close and fold over the bag using the sealing strip located at the top. Remember to label the bag following company procedures if the bar code is not present or is insufficient for delivery to the laboratory.
13. Remove the stub of the shaft from the chuck.
14. Use sanitizer to sanitize the end of the handle to avoid carrying over to the next sample prepare to restart the process.
15. Repeat as necessary to collect additional samples as needed.
16. Please note that each sample will require a new MicroTally® MicroBroom™ Sampler to avoid cross-contamination. It is crucial to change gloves and re-sanitize after each sampling event to maintain proper hygiene and prevent any potential contamination.
17. Send the samples to the laboratory following standard company procedures.

Sample Testing

1. For presence/absence pathogen testing, enrich the MicroTally® MicroBroom™ sampler by adding 50 mL of the appropriate nutrient broth. Stomach to homogenize the sample for at least 60 seconds, ensuring the sampler is fully submerged at the bottom of the bag.
2. For indicator enumeration and pathogen testing, remove aliquots as needed. Incubate the remaining sample following the standard procedures of your pathogen detection test platform, including recommended incubation times and temperatures.
3. For microbial enumeration-only testing, you may either extract microorganisms using 50 mL and homogenize thoroughly or follow your laboratory's established standard procedures.

Technical Support

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