Rea UltraVapor
The Future of Industrial Cleaning

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Rea UltraVapor versus standard wash/foam/rinse sanitation protocol

INTRODUCTION

Working with a major meat processing company, a study was undertaken on their slicing and packaging machines to: 1) assess the effectiveness of standard sanitation protocols in eliminating colony forming organisms from suspected harborage locations, and; 2) to see whether vapor cleaning/sanitizing would offer any advantages or improvements in the level of sanitation and therefore for enhanced food safety and improved shelf life of products.

PROCEDURE

The testing was carried out over 4 consecutive weekends and the use of the vapor cleaning equipment was **after** regular sanitation procedures had been completed—normally the equipment would be re-assembled at this point and turned over to Production.

Quality Assurance and Sanitation staff identified areas on the equipment that they felt represented bacterial harborage locations and areas where audit results were traditionally poor. These locations were swabbed for total plate count analysis to show the result of "normal sanitation" procedures. The same locations were then cleaned and sanitized using a Rea UltraVapor Special II 18 KW portable cleaner/sanitizer and swabbed again. Before and after photos were taken to show the cleaning effectiveness of the equipment.

RESULTS

The chart below shows the total colony counts before and after sanitizing with UltraVapor. Where there were too many colonies to count, the designation TNTC is used.

Test Location	Photo Ref	Colony counts before vapor cleaning	Colony counts after vapor cleaning
Edge of roller	Fig 1, A	TNTC	0
Roller teeth	Fig 1, B	1	0
Top of roller drive belt	Fig 1, C	0	0
Side of roller drive belt	Fig 1, D	TNTC	0
Knives	Fig 2, A	70	0
Springs	Fig 2, B	10	0
Knife/spring housing	Fig 2, C	TNTC	0
Interior of packager	Fig 3 & 12	10	0
Packaging slicer knives	Fig 4 & 5	70	0
Pivot point—meat slicer	Fig 6, A	3	0
Scale housing	Fig 7 & 8	TNTC	0
Slicer universal joint	Fig 9	TNTC	0
Blade counterweight bolt hole	Fig 10 & 11	TNTC	0

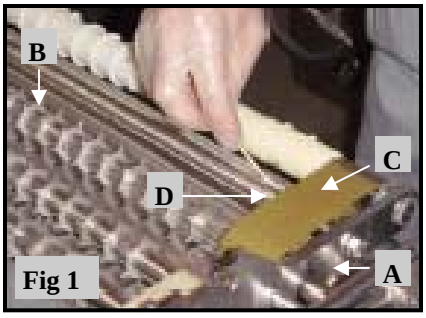


Fig 1

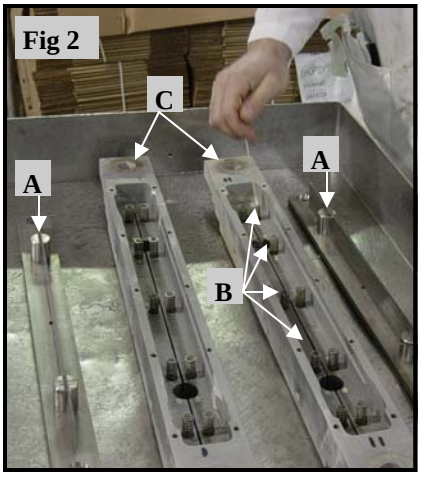


Fig 2

Locations chosen for UltraVapor testing: Before and after cleaning

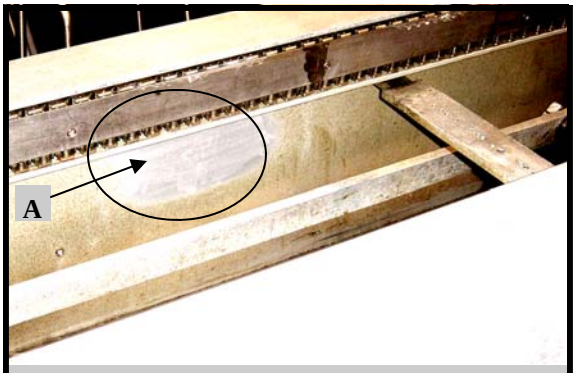
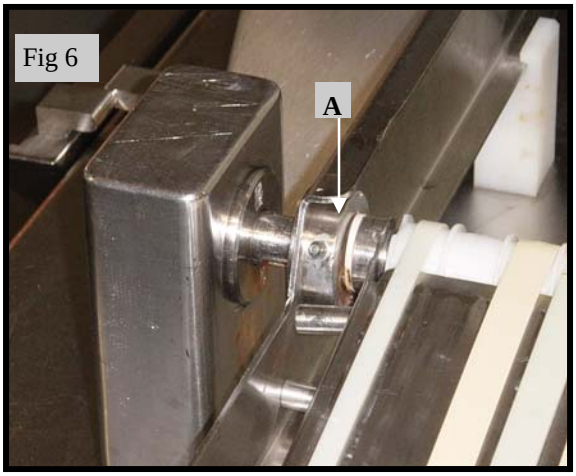
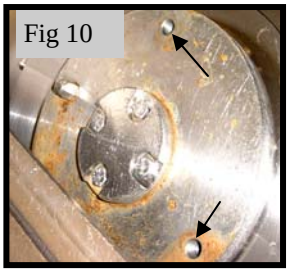


Fig 3 - inside Multivac packaging machine. There appeared to be a biofilm present that was easily removed by UltraVapor.

Fig 4 and 5 - Packaging cutters had a buildup of surface rust and corrosion that was providing refuge for bacteria. Normal sanitation was ineffective in removing this but UltraVapor restored the slicer and left it sanitized and dry.





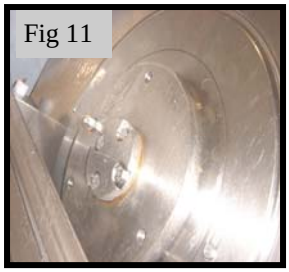
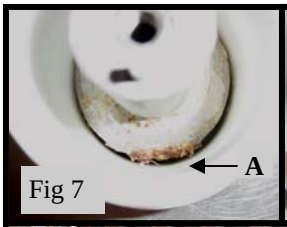
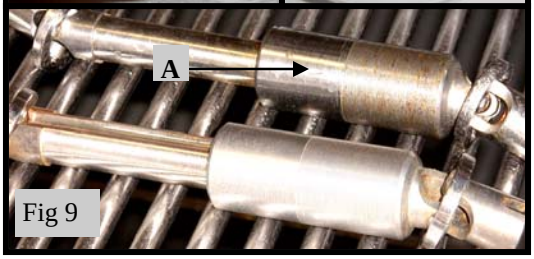


Fig 6 shows a pivot point where residue builds up and isn't removed during normal sanitation. Figure 7 shows a scale hole that is normally not cleaned due to concerns about introducing moisture into the equipment's electronics - figure 8 is after cleaning. In figure 9 the bottom U joint has been cleaned with UltraVapor, sanitizing and removing surface rust and biofilm. Figures 10 and 11 show the slicing blade counterweight. Normal sanitation left water in the bolt holes which promoted bacterial growth - UltraVapor sanitized the part, removed the surface rust and left it dry. Figure 12 shows the Multivac machine being cleaned.





OBSERVATIONS

⇒ **Impressive sanitizing capability**: "UltraVapor works exceptionally well in tackling hot spots, niches/harborage sites and/or difficult to clean areas. This includes the ability to effectively remove biofilms". *After implementation of UltraVapor at another of their facilities, the company documented a significant increase in the shelf life of sliced meats produced for a major corporate customer.*

⇒ **Effective deep cleaning capability**: "UltraVapor proved very capable in removing embedded soils and stains from equipment that normal cleaning was leaving behind" These areas can be bacterial harborage sites and facilitate biofilm formation.

⇒ **Flexible**: "….can be used to clean and sanitize where water can't be used because of fear of damaging water sensitive equipment…." or around electrical panels, conduits etc.

⇒ **Safe:** "...overall, the equipment is safe and easy to use."

CONCLUSION/RECOMMENDATION

"UltraVapor is a valuable food safety tool for sanitizing equipment and surfaces that are not being adequately addressed with current and traditional methods. UltraVapor should be integrated into regular cleaning and sanitizing procedures in facilities producing RTE products."

GFTC Guelph Food Technology Centre

CSA INTERNATIONAL

OFPA ONTARIO FOOD PROTECTION ASSOCIATION

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