



What's better than a Rayon Swab? A Medical Wire Rayon Swab, that's what!



It is often stated that traditional rayon swabs give poor release of sampled bacteria, and so you have to spend much more of your budget on expensive flocked swabs. The rayon swabs are disparagingly referred to as “mattress swabs” in comparison with the “superior” flocked versions, which also happen to be more expensive! It is true that some rayon swabs do give very poor release of organisms. Medical Wire rayon swabs, however, as used in our Transwab[®], Transtube[®] and Virocult[®] ranges consistently yield significantly greater organism release than those of other manufacturers.

An independent study (summarised below), carried out without even the knowledge of Medical Wire*, shows that for MRSA, **organism release from the Medical Wire rayon swab was consistently 2 to 5 times greater** than that for Copan. Similar data from other sources, relating to many other microorganisms has also been reported previously¹.

The reason is that some rayon swabs are very tightly wound, which causes bacteria to become trapped, and subsequently not released and not available for culture or molecular assay. Medical Wire's rayon swabs have a more open weave, and do not trap their specimen in the same way. Thus many more organisms are released, and available for testing.

So if you are struggling with poor results due to inadequate organism release, you can make a big improvement, without extra cost, by switching back to Medical Wire's Transwabs[®] and Transtubes[®].

The following study* was carried out using traditional style liquid Amies transport swabs (with foam pad in the tube) from Medical Wire (Transtube) and Copan. Both products have rayon bud swabs with plastic shafts:

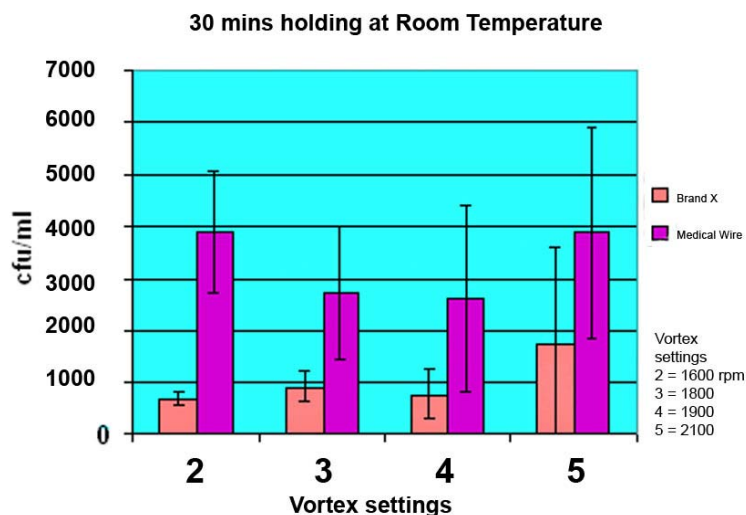
Method

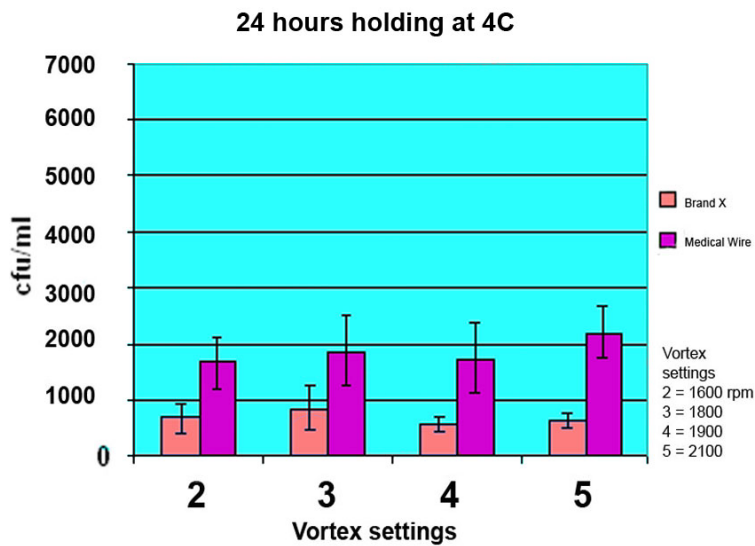
Isolated colonies of MRSA (ATCC 33592) from grown overnight on Columbia blood agar plate were suspended in sterile 0.9% saline to the density of a 0.5 McFarland standard. The suspension was diluted 10⁻⁴ in sterile 0.9% saline.

50 µl of suspension was inoculated onto 24 Copan rayon swab buds and 24 Medical Wire rayon swab buds. Swabs were inserted into their respective transport tubes and squeezed to release the transport media. 12 swabs from each group were held at room temperature and processed after 30 minutes. The other half were held at 4°C for 24 hr, brought to room temperature, and then processed. Swabs were processed by snapping the swabs into 1 ml of supplemented broth, vortexed 2 x 5 sec on 4 different vortex settings (rpm 1600, 1800, 1900, 2100 as determined by strobe light). The swab inoculum concentration was determined by performing duplicate plating of the inoculum. The level of organism recovery from the swabs was determined by performing duplicate plating of the swab broths after vortexing.

Results

Organism release from Medical Wire and Copan rayon swabs was determined by duplicate plate counts after inoculated swabs were vortexed at four different speeds and stored under two different conditions. Duplicate plating of the initial inoculum showed that the swabs were inoculated with approximately 8500 cfu. For the 30 minute RT storage **the average organism release from the Medical Wire rayon swab was 2 to 5 fold greater** than from the Copan rayon swab. At vortex settings of 2 or 3 the release was significantly greater ($p < 0.05$) for the Medical Wire swab. A greater degree of variability was seen for both swabs at vortex settings of 4 and 5. The percent recovery for the Medical Wire swabs ranged from 31 % to 46 %, whereas the percent recovery for the Copan swabs ranged from 8 % to 20 %. For the 24 hr 4°C storage (Fig. 1B), the average organism release was 2 to 3 fold higher and significantly greater ($p < 0.05$) at all vortex settings for the Medical Wire swabs. Percent recoveries ranged from 16 % to 26 % for the Medical Wire swabs and from 6 % to 10 % for the Copan swabs.





Conclusion

Recovery of MRSA ATCC strain 33592 from Copan rayon swabs was 2 to 5 fold lower on average than from the Medical Wire swabs and significantly lower ($p < 0.05$) under 6/8 conditions tested.

** This study was carried out as part of an evaluation of the suitability of swab products for use in a rapid detection system for MRSA*

1. Birrell, K., 2007, Investigation of the ability of transport swabs to release collected micro-organisms - using the roll plate method, Poster C369 / 076, American Society for Microbiology, 107th General Meeting, Toronto, Canada



Don't just go with the flock. You do still have a choice!!!