LAW ENFORCEMENT VEST CASE STUDY

PROKLEAN SERVICES

ABSTRACT

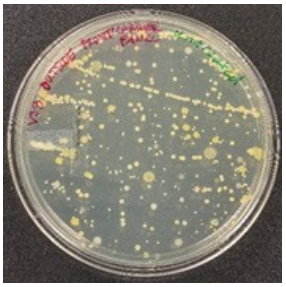
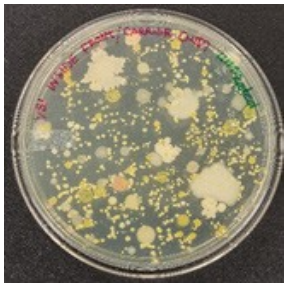
In August 2014, Arizona Law Enforcement Officers voluntarily allowed Pantheon Laboratory chemists to conduct an odor and pathogen study on their ballistic vests and carriers. The objective was to determine how effective the ProKure™ product line was at destroying odor and pathogens found on the vests. While many officers stated that odor control was their primary concern, laboratory tests revealed dangerous levels of pathogens on both the carrier and ballistic panels. ***This study confirmed that ProKure™ delivered strong results and does, in fact, significantly decrease both odor and pathogens on the vests.***

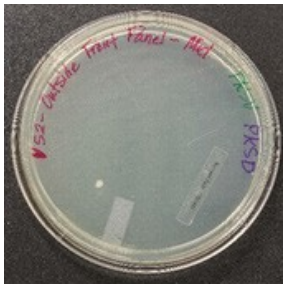
METHODS

1. Six (6) different police officers completed a survey to rate their level of concerns regarding their vest odor and cleanliness. Each officer then gave his/her vest to Pantheon Laboratory to be assessed for both odor and pathogen levels pre and post ProKure™ applications.
2. To assess odor levels, both the officer who owned the vest and a neutral 3rd party rated the vest odor twice on a scale of 1-10 (10 being worst), pre and post treatment with ProKure™. Officers tend to get "used to" their vest smell and admittedly do not smell their vest odor as much as 3rd parties do.
3. To measure pathogen counts, the surfaces of the officer vests (ballistic panel and carriers) were cultured pre and post disinfection.
4. First, untreated vest surfaces were swabbed in predetermined areas; those swabs were then cultured on agar plates at 37°C to determine existing pathogen counts prior to disinfection.
5. Each vest was then sprayed with 100 ppm ProKure™ V liquid and left to sit for five (5) minutes.
6. After five minutes, vest surfaces were re-swabbed. Those swabs were then cultured on agar plates at 37°C.
7. To test the efficacy of ProKure™ to reduce vest odor, after being treated with ProKure™ V, three (3) vests were then treated with ProKure™ G in a vehicle; the other three (3) were placed in a bag and treated with ProKure™ D.
8. After the 4-hour ProKure™ G and D gas treatments, each of the carriers and panels were re-swabbed and the swabs were cultured using the same process mentioned above.
9. Officers and the 3rd party study participant then re-rated the odors on a scale of 1-10.
10. Pictures were taken of all agar plates and the number of colony forming units (CFU's) of pathogens were counted 48 hours later.

RESULTS

BEFORE TREATMENT			VEST #	AFTER TREATMENT		
# of CFUs	Officer Odor Rank	3rd Party Odor Rank		# of CFUs	Officer Odor Rank	3rd Party Odor Rank
TNTC	6	9	**1**	1	0	2
TNTC	2	5	**2**	1	0	1
TNTC	4	10+	**3**	1	0	2
TNTC	1	8	**4**	0	0	0
TNTC	1	3	**5**	1	0	0
TNTC	10	10+	**6**	1	0	2
TNTC	**4**	**7.5**	**AVERAGE**	**0.8**	**0**	**1.2**
TYPICAL AGAR PLATES - BEFORE				**TYPICAL AGAR PLATES - AFTER**		

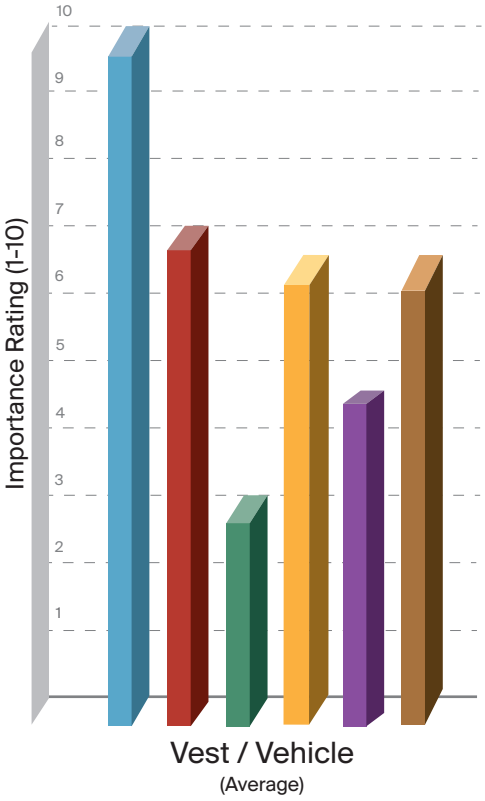





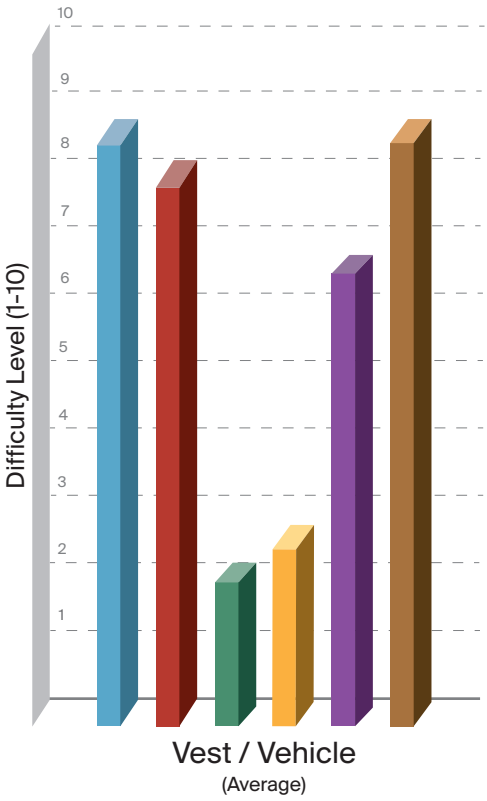
TNTC = Too numerous to count

Officer Survey Results

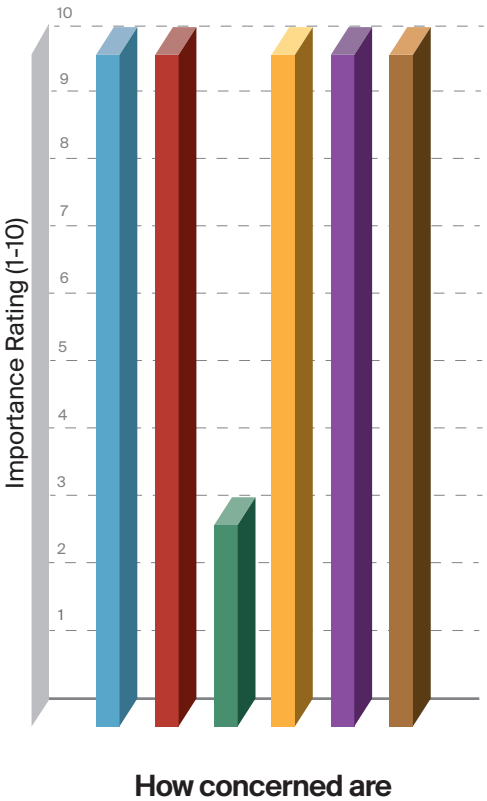
Key	Vest 1	Vest 2	Vest 3	Vest 4	Vest 5	Vest 6
Owned Vest	8 years	6 years	8 years	4.5 years	1 year	9 years



How concerned are you about pathogens?



How difficult is it to control vest odor?

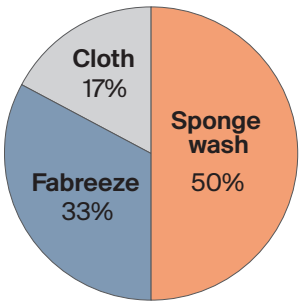


How concerned are you about bringing pathogens home?

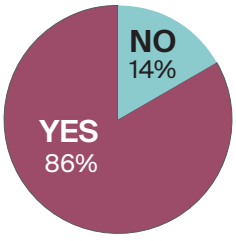
Officers Have:

Been exposed to bodily fluids?

Normal routine for deodorizing panel



Been told that vest smells?



Used bleach to disinfect vehicle?

Used bleach for odor control?

Vest

Vehicle