

A Breath of Fresh Air for FESA Career Fire Fighters !

Evaluation of the P/OV/F Filter after One Bushfire Season

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Introduction

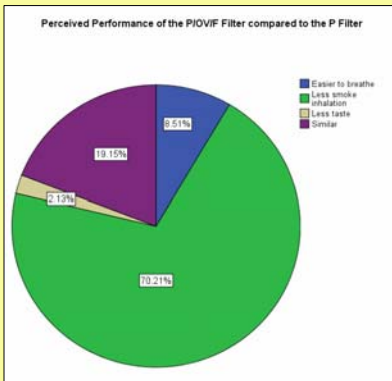
In 2006 the Bushfire CRC Project D4 "Respiratory Health of Fire Fighters" resulted in the Fire and Emergency Services Authority of Western Australia endorsing the use of the particulate/organic vapour/formaldehyde (P/OV/F) filters for their career fire fighters.

After one bushfire season a cross-sectional survey with 47 FESA career fighters was undertaken to evaluate the use and effectiveness of the newly issued filters.



Objectives

- Evaluate FESA's policy change with regard to the use of the particulate/organic vapour/formaldehyde filters
- Evaluate the introduction of the filters, the use and perceived effectiveness during bushfire fighting
- Correlate the fire fighters' tasks with the effective service life of the filters



Methods

Telephone questionnaire to obtain detailed information about:

- Use of the previous and current filters/masks
 - Intermittent/continuously/only for certain tasks
 - Removal of the respirator
 - Humidity inside the respirator
- Bushfire smoke exposure during last bushfire season
 - Frequency/smoke density/exposure period
- Job tasks
- Respiratory symptoms during and after smoke exposure
 - Affect on breathing
 - Coughing/wheezing/shortness of breath
- Storage of filters when not in use

Major Findings

During bushfire fighting:

- 81% of FESA career fire fighters interviewed routinely wear a respirator
- 60% state that the respirator is comfortable to use
- 81% experience considerably fewer respiratory symptoms during and following bushfire smoke exposure using the P/OV/F filters compared to the previously issued P filters
- 51% report that the respirator accumulates moisture inside, thereby compromising the seal of the mask
- 80% of the fire fighters remove the respirator at some stage during their fire-fighting activities (38% for communication reasons)
- No correlation was found between job tasks and duration of effectiveness of the filters



Current Issues

- Incompatibility of the helmet, goggles and respirator
- Leakage of the mask due to moisture build-up inside
- Verbal communication impossible when wearing the respirator

Future Considerations

- Use of dosimeters to monitor CO levels on the fire ground, as CO is not removed by the respirators
- Development of an indicator to monitor effective service life of the respirators