**Fent, K. et al, *Understanding airborne contaminants produced by different fuel packages during training fires, JOEH (2019)*:**

"Air concentrations for the majority of chemicals of
interest were highest for the Bravo OSB scenarios followed
by Alpha OSB, pallet, and straw, and then simulated smoke." Pg 10

"...our overall findings suggest that burning OSB releases more airborne
toxicants than pallet and straw or simulated smoke." Pg 10

"Efforts should be taken to minimize the use of OSB during training fires
where appropriate, particularly when possible to meet training objectives
without the use of this material." Pg 10

**Fent, K. et al, *Firefighters' and instructors' absorption of PAHs and benzene during training exercises, IJHEH (2019):***

"Median concentrations of nearly all PAH metabolites... were highest for OSB,
followed by pallet and straw, and then simulated smoke." Pg 1

"A single day of OSB exercises led to a 30-fold increase in 1-hydroxypyrene for instructors,
culminating in a median end-of-shift concentration 3.5-fold greater than median levels
measured from firefighters in a previous controlled-residential fire study." Pg 1

"Exposures were highest for the OSB scenario and instructors accumulated
PAHs with repeated daily exercises." Pg 1

"Generally, the magnitude of contaminants measured in air were highest for the
OSB exercises, followed by pallet and straw and then simulated smoke exercises." Pg 2

"The most important results of this study are... firefighters and
instructors undergoing training exercises involving OSB experienced
higher exposures than pallet and straw (alone) as the fuel source." Pg 6

Some have asserted that Fig 2 from ***Firefighters' and Instructors' Absorption of PAHs and Benzene During Training Exercises (2019) IJHEH****,* indicates that OSB and pallet and straw exposures are similar.

This is incorrect as Fig 2 clearly shows the average instructors post 3rd exercise concentration of 1-hydroxypyrene in urine is 33% higher with OSB Alpha than pallets and straw. Furthermore Fig 1 in the same paper shows the average instructors post 3rd exercise concentration of hydroxyphenanthrenes in urine is 57% higher with OSB Alpha than pallets and straw **AND** the data in the supporting information shows that the average instructors post 3rd exercise concentration of total PAH-OHs is 82% higher with OSB Alpha than pallets and straw.

Data in this paper also indicates that fire fighters exhaled breath benzene after one exposure increases by 195% after one OSB Alpha exposure while it increases by 99% after one pallet and straw exposure. These are bio-markers of exposure to chemical carcinogens and the higher exposures quantified with OSB Alpha are significant.

**Laitinen, J. et al, *Fire fighting trainers' exposure to carcinogenic agents in smoke diving simulators, Toxicology Letters (2010):***

"The highest excretion of 1-pyrenol... and hydrogen cyanide...
were measured during the burning of conifer plywood and chipboard,
and the lowest when pure pine and spruce wood... was burned." Pg 61

"When conifer plywood was replaced with pure spruce and
pine wood, hydrogen cyanide emission decreased even more, by
almost 95%." Pg 62

"We focused on the concentration of carcinogenic benzene, of which the
burning of conifer plywood emitted the highest concentrations." Pg 62

"The concentration of benzene emissions from the burning of pure spruce
and pine wood, on the other hand, was 20% of that emitted from the
burning of conifer plywood." Pg 62

"The excretion of muconic acid showed that the burning of
conifer plywood caused greater exposure to benzene for the trainers than
the burning of pure spruce and pine wood or propane." Pg 62

"Exposure to polycyclic aromatic hydrocarbons was measured by
following fire fighters' urinary 1-pyrenol excretions in time...
The highest exposure levels were measured when conifer plywood
was burned, the second highest being recorded when chipboard was burned." Pg 63

"The highest excretion of 1-pyrenol and muconic acid and emis-
sion of benzene and hydrogen cyanide were measured during the
burning of conifer plywood and chipboard, and the lowest when
pure pine and spruce wood was burned." Pg 64

"As a result of these findings, we suggest glueless wood or gas
as the safest burning material..." Pg 64