

histological subtype, increased risks and positive exposure response-relationships were apparent only for squamous cell carcinoma and small cell lung cancer.

**Conclusions** Our pooled analysis suggests that occupational exposure to PAH is associated with a modest increase in the risk of lung cancer, after adjustment for tobacco smoking and exposure to other occupational lung carcinogens.

## Oral Presentation

### Risk Assessment

#### 0373 ASSESSING CANCER HAZARDS THROUGH EVIDENCE INTEGRATION - WHY IS IT IMPORTANT?

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Hazard identification involves the qualitative evaluation of scientific evidence on the association between environmental and occupational exposures and human cancer. Important policy decisions to reduce exposure to carcinogens in the workplace have resulted from hazard assessments conducted by authoritative bodies worldwide. Occupational cancer hazards have been successfully identified using published guidelines that integrate published evidence from studies with observational epidemiologic as well as experimental designs. This talk will describe methods for prioritising and integrating evidence across disciplines for hazard assessment and highlight examples where this has been important for protecting the health of workers.

## Oral Presentation

### Pesticides

#### 0374 MULTI-CRITERIA DECISION ANALYSIS (MCDA) COMPARING AGRICULTURAL PRODUCTION METHODS: PROTOCOL FOR ANALYSING BRITISH COLUMBIA (BC) BLUEBERRIES AND ECUADOR BANANAS

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**Background** Expansion of agro-industrial approaches has raised concerns over occupational and environmental exposures, for example through intensive agrochemical use. Agricultural production decisions are influenced by assumptions regarding unit-specific criteria of 'productive efficiency' (revenues and yields), with limited attention to the association between costs and consequences and broader health determinants (sustainability and health effects). This study applies a population health

perspective to investigate the occupational and environmental consequences of production options by incorporating a *comprehensive* range of criteria. Specifically we investigate, in partnership with producers: what is the "best" agricultural production method for producing bananas in Ecuador and blueberries in BC?

**Methods** Two MCDAs per jurisdiction (Ecuador and BC) are used to calculate aggregate scores to rank production methods (agro-industrial, agro-ecological, and mixed-methods). The first MCDA is an 'actual' model, representing real-world decisions (constrained producer choices). The second MCDA is a 'preference' model representing no constraints (producer preferences). Additionally, discrete choice modelling is used to simulate hypothetical scenarios of components (e.g. policy instruments) that would sway producers towards their preferences, with sensitivity analyses to consider the implications.

**Results** If agro-industrial production is *not* the highest rank, a case can be made for more sustainable agriculture. The sensitivity of how decisions could move towards sustainable solutions that produce less health consequences and policies to facilitate such pursuit are assessed.

**Conclusions** As producers express greater concern for sustainability and certification that recognise that "good practices" are applied, MCDA suggests a way that evidence can be collected and analysed to support decision-making, transparently and comprehensively.

## Oral Presentation

### Policy/Impact

#### 0375 EPIDEMIOLOGIC EVIDENCE FOR RISK ASSESSMENT – HOW SUCCESSFUL HAVE WE BEEN?

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Studies of workers have played a central role in identifying human carcinogens. For more than a third of the approximately 100 agents classified as carcinogenic (Group 1) by IARC with sufficient evidence in humans, the critical evidence was provided by occupational epidemiologic studies. Data from occupational studies has also contributed important evidence to identifying over 300 possibly or probably carcinogenic agents. Nevertheless, the contribution of occupational epidemiology could be improved. Beyond clear reporting of methods and results, the greatest need is for quantitative assessment of exposure and analysis of exposure-response relations. The political context of carcinogen assessment imposes barriers of a different kind. Actions by actors with vested interests to intimidate scientists, stifle debate and derail risk assessment are well documented. Recent evaluations of the herbicide glyphosate will be discussed as a case example.