

Educational Approach to Increase Respirator Use among Broiler Chicken Workers

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Background

- Respiratory diseases are more common among agricultural workers compared to workers in other industries.
- Human and animal health concerns exist surrounding aerosols (e.g., organic dusts) generated in CAFO style broiler chicken farms. Some limited information is known about the respiratory hazards in the broiler industry and exposures as high as 37.6 mg/m³ have been reported.
- These high concentrations of dust were noted in the last few weeks of broiler growth.
- Therefore, exposure reduction through administrative, engineering or personal respiratory protection for growers is recommended.
- However, limited information exists about respirator use among agricultural workers, and no information has been reported on respirator use or barriers to use among broiler farm workers.

Specific Aims

1. Determine awareness of inhalation hazards in the broiler growing environment, as well as respirator usage and barriers to respirator use among two geographically isolated groups of broiler growers in Texas, based on input from a stakeholder group that includes representatives from each group.
2. Assess levels of aerosolized broiler dust, endotoxin, bacteria, fungi and ammonia exposure among broiler growers using a task-based participatory approach.
3. Assess whether perceptions of having lung problems, barriers to respirator use, benefits of respirator use, and reported respirator use among broiler growers increases after exposure to a stakeholder-derived educational program.

Activities/Outputs

- Compared the effectiveness of a water sprinkling system (i.e., engineering control) for reducing dust and ammonia gas concentrations in a broiler chicken production building.
- Compared the effectiveness of an administrative control for reducing exposure to inhalable dust during work in broiler chicken production buildings.
- Determined barriers to health and safety research among broiler chicken producers.
- Characterized personal exposure to dust and bioaerosols during work on 63 broiler chicken farms using state-of-the-art genomic sequencing technology.

Outcomes/Impact

- Understand how broiler workers/managers beliefs about safety and health research on their farms
- Growers seem to know that inhalation hazards are present and wear a respirator if they want to, but don't know what "all the fuss" is about.
- Understand how simple solutions such as task modification may reduce inhalation exposures control methodologies among broiler producers and workers.
- Understand the diversity of inhalable bioaerosol exposures on broiler chicken farms