A community and industry engaged approach to studying work organization and the occupational health of Latino thoroughbred workers

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How this work came about

Vulnerable worker health

GAP

Industries relevant to KY

Community engaged research

Employer engaged research

work organization
Agricultural workers, vulnerable workers

• Hazardous industry
  – Highest fatality rate across all industries (CFOI, 2014)

• Exempt from many labor protections
  – Fair Labor Standards Act
  – Workers’ compensation

• Comprised mostly of Hispanic workers
  – Foreign-born comprise 16% of labor force, yet half of all ag workers (BLS, 2012)
  – Latinos comprise 83% of crop workers in US (NAWS, 2005)

• Hispanics are particularly vulnerable
  – 25% of Latino workers injured in past year (Swanberg et al., 2013)
  – Latino injury and fatality rates highest among all ethnic groups (CFOI, 2014) and is rising (BLS, 2014)
Animal Production Workers
Thoroughbred farmworkers

Animal production workers experience the highest nonfatal injury rate across all agricultural industries.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Non-Fatal Illness/Injury Rate (BLS, 2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All industries</td>
<td>3.7</td>
</tr>
<tr>
<td>Agriculture</td>
<td>5.5</td>
</tr>
<tr>
<td>Animal Production</td>
<td>6.2</td>
</tr>
</tbody>
</table>
The Hazards of Horse Work

Research on horse breeding is scarce, but hazards associated with horses include:

The Horse
- Bites, Kicks (Iba, et al., 2001)
- Falls (Iba, et al., 2001)
- Pulling on upper extremity joints (Lofquist, et al., 2009)

Dusty Environment
- Respirable Dust (Elfman, et al., 2009)
- β (1,3) Glucan (Elfman, et al., 2009)
- Endotoxins, mold (Mackieicicz, et al., 1996)
Organization of Work Framework

(Sauter, et al., 2002)

**External Context**
- Public policies,
- Economic circumstances

**Organizational Context**
- Management structures
- Supervisory practices

**Work Context**
- Job characteristics
- Safety climate
- Work processes
- Task attributes
- Social aspects of job
Relationships between work organization and occupational health

MacDonald et al., 2008
Thoroughbred Worker & Health Safety Study

Research Goals
- Identify job/workplace characteristics & hazards
- Describe Latino workers & their occupational health
- Determine job/workplace factors associated with ill health and hazard exposure
- Develop & disseminate outreach materials

Research Methodology
- Thoroughbred farm interview
  - Phone interview (20-30 min)
  - Farm interview (1-3 hr)
  - Injury log & other documents
- Latin thoroughbred worker interview (1-1.5 hr)

Community & Industry Benefits
- Increase understanding of job hazards and work stressors
- Reduce occupational illness & injury
- Reduce individual & organizational costs
- Sharing of best practices among farms

Educational Materials
- Safety checklist
- Graphic safety chart
- Best practices report
- Topical issue briefs
Thoroughbred Worker Health & Safety Study

Timeline

Phase 1: Thoroughbred Farm Interview
- Year 1: Prepare & Build Advisory Councils
  - Year 2: Conduct Farm Interview

Phase 2: Horse Worker Survey
- Year 3: Interview Latino Workers

Phase 3: Educational Materials
- Year 4: Analyze Data

Year 5: Develop & Distribute Materials
Advisory Councils

- Project goals
- Methodology
- Recruitment
- Instrument development
- Data analysis/interpretation
- Translation
Industry Advisory Council

- Kentucky Thoroughbred Association
- Kentucky Thoroughbred Owners and Breeders
- Area Thoroughbred farms
- Bluegrass Community Health Center
- Kentucky Thoroughbred Farm Managers’ Club
- Commerce Lexington, Inc.
- Lexington Fayette Urban County Government (Multicultural Affairs)
- Blue Grass Farms Charities
- Horse farm worker

Community Advisory Council

- Lexington Fayette Urban County Government
- Kentucky Migrant Farmworkers with Disabilities Employment Partnership
- Area Health Education Center
- RadioVida
- Bluegrass Community Health Center
- Maxwell Legal Clinic
- Programa de Seguro Médico para los Niños de Kentucky (KCHIP)
- Southeast Center for Agricultural Health and Injury Prevention
- Goodwill Industries
Thoroughbred Worker Health & Safety Study

Timeline

Phase 1: Thoroughbred Farm Interview
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- Year 4: Analyze Data

Phase 3: Educational Materials
- Year 5: Develop & Distribute Materials
Thoroughbred Farm Interview
Data Collection

▪ **Phone Interview**
  ▪ 20-minute, telephone-administered survey
  ▪ **Content:** 73 questions
    - farm characteristics
    - workforce demographics
    - organizational policies and practices
    - occupational health and safety

▪ **Farm Interview**
  ▪ 1-4 hour, face-to-face, in-depth interview & farm tour
  ▪ **Content:**
    - Further details and context on all above
    - Details around injuries/illness (injury logs if available)
    - Provision of PPE
Recruiting & Data Collection

Advisory Board provides farm contact information

Team sends letter signed by advisory board members

Farms called within a week

Phone Interview Completed, Farm interview scheduled

Farm interview Completed, Materials collected

Thank you sent and any follow-up completed
Thoroughbred Farm Interview
Eligibility, Sampling, and Recruitment

• **Farm Eligibility**
  – thoroughbred breeding and/or boarding
  – employed ≥1 Latino worker
  – located in the southeast U.S.

• **Representative Eligibility**
  – ≥18 years old
  – farm owner, manager, or administrative personnel

82 farms Identified & contacted
62 farms Met eligibility criteria
32 farms participated
52%
Thoroughbred Worker Health & Safety Study

Timeline

Phase 1: Thoroughbred Farm Interview
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Phase 2: Horse Worker Survey
- Year 3: Interview Latino Workers
- Year 4: Analyze Data

Phase 3: Educational Materials
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Advisory Councils

- Project goals
- Methodology
- Recruitment
- Instrument development
- Data analysis/interpretation
- Translation
Latino Worker Survey
Training & Data Collection Process

**Training**
- Study purpose
- Human subjects’ protection
- Research ethics
- Survey administration
- Intent behind individual questions (including feedback)

**Quality Control**
- 5 pilot surveys (observed)
- Weekly 1:1 meetings
- Review of every survey by 2 staff
- Additional observed interview halfway through
Latino Horse Worker Survey
Eligibility and Recruitment

• Worker Eligibility
  – Latino/Hispanic
  – ≥18 years old
  – Currently employed at a thoroughbred horse farm for ≥9 months

• Recruitment
  – Community-based, purposive sampling strategy, and snowballing
  – Fliers, word-of-mouth, and local radio
  – Gift cards for participation
Latino Horse Worker Survey

Data Collection

- **Worker Interview (n=225)**
  - 1-1.5 hour, face-to-face, in-depth interview
  - Conducted by four trained lay health promoters (*Promotoras*) in Spanish or English
  - **Content**: 462 questions
    - job tasks
    - perceived hazards
    - injuries or near miss incidents
    - circumstances surrounding hazards and incidents
    - demographic and general health information
Respiratory Supplement: Data collection (N=80)

- **Interview-administered Survey**
  - 30 min
  - Conducted by 2 trained *Promotoras*
  - Community-based sampling
  - **Content**: 52 questions
    - Respiratory symptoms
    - Job title
    - Work-related exposures
    - Potential confounders (smoking history, allergies)

- **Spirometer test**
Findings Snapshot:
Thoroughbred Farm Interview

• Analyses conducted to date
  – Description of work organization
  – Comparison of managers’ perception of risk and provision of PPE
  – Description of injuries gleaned from injury logs
Thoroughbred Farm Interview
Findings:
Work organization

<table>
<thead>
<tr>
<th>Farm Characteristics (N=32)</th>
<th>Median</th>
<th>IQR</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of all year round workers on farm $^{1,2}$</td>
<td>12.0</td>
<td>23</td>
<td>1-230</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Farm size by number of year-round employees</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small (1-10 workers)</td>
<td>14</td>
<td>43.8</td>
</tr>
<tr>
<td>Medium (11-25 workers)</td>
<td>9</td>
<td>28.1</td>
</tr>
<tr>
<td>Large (&gt;25 workers)</td>
<td>9</td>
<td>28.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thoroughbred operation includes</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Breeding</td>
<td>30</td>
<td>93.8</td>
</tr>
<tr>
<td>Boarding</td>
<td>26</td>
<td>81.3</td>
</tr>
<tr>
<td>Racing</td>
<td>26</td>
<td>81.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other farm operations</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional commodities</td>
<td>12</td>
<td>37.5</td>
</tr>
</tbody>
</table>

$^1$These statistical differences were expected in these variables, as they are other measures of farm size
$^2$Includes both office personnel and farmworkers employed in 2012
*p<.08, *p<.05, ** p<.01, ***p<.001 indicate statistically significant differences based on farm size based on number of employees
Thoroughbred Farm Interview: Demographic Traits of Farm Workers
Thoroughbred Farm Interview: Employment Characteristics

<table>
<thead>
<tr>
<th>Employment Characteristics ¹ (N=32)</th>
<th>Median</th>
<th>IQR</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. year-round farmworkers (N=32)</td>
<td>9.5</td>
<td>15</td>
<td>1-180</td>
</tr>
<tr>
<td>Other workers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. farms with part-time workers</td>
<td>11</td>
<td>34.4</td>
<td></td>
</tr>
<tr>
<td>No. farms with seasonal workers</td>
<td>20</td>
<td>62.5</td>
<td></td>
</tr>
<tr>
<td>No. farms with contract workers</td>
<td>24</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Hours worked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. hours considered full-time (N=32)</td>
<td>48</td>
<td>0.5</td>
<td>22.5-54</td>
</tr>
<tr>
<td>No. hours considered part-time (N=10)</td>
<td>21.5</td>
<td>7.5</td>
<td>15.0-45</td>
</tr>
<tr>
<td>Average hourly wage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time worker average wage/hr. (N=31)</td>
<td>$9.50</td>
<td>1.9</td>
<td>7.10-13.5</td>
</tr>
<tr>
<td>Part-time worker average wage/hr. (N=11)</td>
<td>$8.80</td>
<td>1.5</td>
<td>6.2-20</td>
</tr>
<tr>
<td>Seasonal worker average wage/hr. (N=18)</td>
<td>$8.60</td>
<td>1</td>
<td>7.3-11.5</td>
</tr>
</tbody>
</table>

¹ All statistics refer to farmworkers, not workers in office or managerial positions.
# Thoroughbred Farm Interview: Farmworker Benefits

## Benefits for Farmworkers

<table>
<thead>
<tr>
<th>Benefits for Farmworkers</th>
<th>Full-time (N=32)</th>
<th>Part-time (N=11)</th>
<th>Seasonal (N=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal/individual coverage</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health insurance</td>
<td>17^</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Health insurance for family</td>
<td>15</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Paid leave</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid Vacation Days</td>
<td>27</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Paid Sick Days</td>
<td>26</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>General Paid Time Off</td>
<td>8*</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Any paid leave^1</td>
<td>31</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Safety Policies/Practices</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has Worker's Compensation Insurance</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has employee policy manual</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In Spanish</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has employee safety manual</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In Spanish</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^1Includes access to at least one of paid vacation, formal/informal sick leave, or paid time off; "Other" can include retirement, dental, life insurance; holiday/sales/seasonal bonuses, housing, food, money loans, contributions to 401k plan, retirement matching, onsite flu shots, flexible work time (for kids or doctor), savings, etc.
Thoroughbred Farm Interview: Findings

“Leading one in, picking feet, ....the number one most dangerous job is working with the horses”

“Far and away the most injuries occur when somebody’s on the end of a shank leading a horse”

Horse is the greatest threat on the farm

“One of the more dangerous things we do is bringing horses in and out because, you know, four or five mares at the gate, two people bringing them in, one bully wants to wheel and kick the other ones when they’re all up there crowded at the gate and it’s a dangerous spot”
## PPE Provision and Policies

<table>
<thead>
<tr>
<th>PPE Type</th>
<th>Farms Provide (%)</th>
<th>Farms Mandate (%)</th>
<th>Tasks mandated for</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horse-Related</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helmets</td>
<td>10(38.5)</td>
<td>7(26.9)</td>
<td>Riding, Breeding, Chainsaws</td>
</tr>
<tr>
<td>Padded vests</td>
<td>7(26.9)</td>
<td>6(23.1)</td>
<td>Riding, Breeding</td>
</tr>
<tr>
<td>Steel-toe boots</td>
<td>1(3.9)</td>
<td>1(3.9)</td>
<td>No tasks given</td>
</tr>
<tr>
<td><strong>Non-Horse Related</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latex gloves</td>
<td>26 (100)</td>
<td>11(42.3)</td>
<td>Medicines, Chemicals</td>
</tr>
<tr>
<td>Eye protection</td>
<td>24(92.3)</td>
<td>16(61.5)</td>
<td>Weedeating, Pressure Washing, Fence repair, Chemicals, Chainsaws, Equipment</td>
</tr>
<tr>
<td>Masks/ Respirators</td>
<td>15(57.7)</td>
<td>5(19.2)</td>
<td>Chemicals, Mowing</td>
</tr>
<tr>
<td>Hearing protection</td>
<td>13(50)</td>
<td>6(23.1)</td>
<td>Equipment</td>
</tr>
<tr>
<td>Cut-resistant gloves</td>
<td>8(30.8)</td>
<td>2(7.7)</td>
<td>Fence repair, Painting, Hay</td>
</tr>
<tr>
<td>Paper suit</td>
<td>2(7.7)</td>
<td>1(3.9)</td>
<td>Chemicals</td>
</tr>
</tbody>
</table>

*Horse-Related refers to equipment that protects one against the horse. Non-horse related refers to equipment that protects from any other sort of mechanism of injury or illness on the farm.
<table>
<thead>
<tr>
<th>Factors influencing farms’ provision of PPE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Differences in farm context</strong></td>
</tr>
<tr>
<td>“I see a lot of other farms that can afford a lot of practices that I’m just simply financially unable to. I just try, since I’m pretty much a hands-on owner/manager.”</td>
</tr>
<tr>
<td>“We don’t have helmets because we don’t have stallions. We don’t have flak jackets because we don’t have stallions.”</td>
</tr>
<tr>
<td><strong>Workers are most important agents in their safety</strong></td>
</tr>
<tr>
<td>“If someone comes down to the complex and all of a sudden said ‘I want to start wearing a vest down there,’ we’d certainly get it for them.”</td>
</tr>
<tr>
<td>“They could wear masks if they wanted to, we would supply it, but no one has ever asked for one.”</td>
</tr>
<tr>
<td><strong>Lack of confidence in PPE’s effectiveness in averting horse-related injury</strong></td>
</tr>
<tr>
<td>“You could probably arm yourself with a suit of armor but it’s impractical so you just have to be careful and calculating throughout your day.”</td>
</tr>
<tr>
<td>“If farms thought helmets and vests were really needed or preventative, I think more farms would do it.”</td>
</tr>
<tr>
<td><strong>Perception that risk could never be eliminated</strong></td>
</tr>
<tr>
<td>“It’s not if you’re going to get hurt it’s when you’re going to get hurt.”</td>
</tr>
<tr>
<td>“You could be the best horseman in the world and one could get on top of you.”</td>
</tr>
</tbody>
</table>
Thoroughbred Farm Interview
Injury findings

284 injuries were documented

Gender

- 81% Male

Ethnicity

- 58% Non-Latino
Top Sites
Upper/lower appendages (49%)

Top Mechanisms
Kicks, struck-by, stepped on, jerks (47%)

Top Diagnoses
General pain or sprains strains, tears (58%)

Horse greatest source of injury on farm

Non-Latinos more likely to report injuries

Latinos more likely to report horse-related injuries

Employer data
Limitations of Employer-Reported Data

• Vulnerable workers may not report (Azaroff et al., 2002)
  – Immigration status
  – May fear job loss
  – May minimize injuries (Clouser, 2013)

• Lacking context surrounding injuries
  – Logs have limited data
  – Informal record keeping on small farms
  – Cannot connect with other worker/employment factors
Findings Snapshot:
Latino Horse Worker Survey

• Analyses conducted to date
  – Description of worker injuries
  – Detailed analysis of relationship between certain work org factors and respiratory health
Latino Horse Worker Survey
Farmworker Demographics (N=225)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>86 (193)</td>
</tr>
<tr>
<td>Age (Mean, SD)</td>
<td>35.4 (9.6)</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>67.5 (152)</td>
</tr>
<tr>
<td>Has Children</td>
<td>64 (144)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Middle School or Less (0-9)</td>
<td>73 (164)</td>
</tr>
<tr>
<td>Years in US* (Mean, SD)</td>
<td>14.5 (8)</td>
</tr>
<tr>
<td>Country of Origin</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>84(190)</td>
</tr>
<tr>
<td>Dominant Language</td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>95(213)</td>
</tr>
</tbody>
</table>
# Occupational Characteristics (n=225)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years on Horse Farms</td>
<td>10.50 (7.31)</td>
</tr>
<tr>
<td>Years at Current Farm</td>
<td>5.40 (4.61)</td>
</tr>
<tr>
<td>Months Worked a Year</td>
<td>11.94 (0.44)</td>
</tr>
<tr>
<td>Days/Week Worked</td>
<td>5.92 (0.54)</td>
</tr>
<tr>
<td>Hours/Day Worked</td>
<td>8.16 (0.67)</td>
</tr>
</tbody>
</table>
Latino Worker Survey
Injury findings

Injured in Past Year (43%)

- Not Injured, 57%
- Injured, First Aid 34%
- Injured, Medical Care 18%

Reported ALL Medical Care Injuries (92%)
Reported ALL First Aid injuries (68%)
Injury summary
(N=137)

Top Sites
62% upper/lower appendages

Top Tasks
Taking out, leading, walking (46%)

Top Mechanism
82% of injuries were caused by a horse

Total injuries reported to supervisor (76%)

Worker data
Latino Horse Worker Survey: Worker Respiratory Health

• 62% reported respiratory symptoms in past year
  – 44% experienced cough, compared to 11% of general population (NHANES, 2012).
• 92% currently worked in barns
  – 38% had access to dust masks
  – 63% never, seldom, or sometimes used masks while in the barn
## Respiratory Outcomes (N=225)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Any Upper Symptoms(^b)</th>
<th>Any Lower Symptoms(^c)</th>
<th>Any Symptoms(^d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (1 year increase)</td>
<td>1.00 (0.96-1.03)</td>
<td>1.00 (0.96-1.04)</td>
<td>1.00 (0.96-1.05)</td>
</tr>
<tr>
<td><strong>Sex</strong> (female vs male)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>2.13 (0.88-5.13)</td>
<td>4.33 (1.60-11.70)</td>
<td>4.28 (1.45-12.63)</td>
</tr>
<tr>
<td><strong>Education</strong> (low vs high)</td>
<td>1.06 (0.51-2.23)</td>
<td>0.80 (0.38-1.70)</td>
<td>0.65 (0.29-1.46)</td>
</tr>
<tr>
<td><strong>Years in US</strong> (1 yr increase)</td>
<td>0.96 (0.92-1.01)</td>
<td>0.96 (0.92-1.01)</td>
<td>0.95 (0.90-1.00)</td>
</tr>
<tr>
<td>English understanding (poor vs good)</td>
<td>1.41 (0.67-2.98)</td>
<td>1.93 (0.90-4.11)</td>
<td>1.43 (0.63-3.24)</td>
</tr>
<tr>
<td>Smoking status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Former vs never</strong></td>
<td>2.95 (1.36-6.43)</td>
<td>1.48 (0.71-3.08)</td>
<td>3.07 (1.30-7.26)</td>
</tr>
<tr>
<td>Current vs never</td>
<td>0.83 (0.36-1.92)</td>
<td>0.41 (0.17-1.01)</td>
<td>0.59 (0.25-1.39)</td>
</tr>
<tr>
<td>Time in barns/week (long vs short)(^e)</td>
<td>0.93 (0.49-1.74)</td>
<td>1.09 (0.58-2.05)</td>
<td>0.99 (0.51-1.93)</td>
</tr>
<tr>
<td><strong>Dust mask utilization (less vs more)</strong></td>
<td>2.34 (1.21-4.53)</td>
<td>1.71 (0.87-3.36)</td>
<td>1.79 (0.89-3.62)</td>
</tr>
<tr>
<td>Years of work at the farm</td>
<td>1.02 (0.94-1.10)</td>
<td>0.97 (0.89-1.05)</td>
<td>1.01 (0.93-1.09)</td>
</tr>
</tbody>
</table>
Challenges Ahead/Next Steps

Work organization factors
- Scheduling practices
- Supervisor-subordinate relationships
- Physical workload
- Work exposures
- Psychological demands

Job-Level Hazards

Injury & Illnesses

Worker health
- Respiratory symptoms
- Lung function (spirometer)
- Injury
- Musculoskeletal disorders

(MacDonald et al., 2008; Gryzywacz et al., 2007; Swaen et al., 2004)
Community/industry outputs

Issue Brief Topics/Titles

• What is the Thoroughbred Worker Health and Safety Study?

• Worker Injuries on Thoroughbred Farms: What are we learning?

• Thoroughbred Farmworker demographics and benefits

• Respiratory health of farmworkers
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Questions?

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Manuscripts


Presentations


