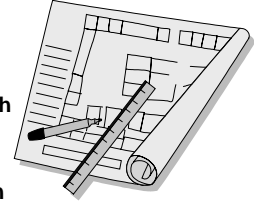


## Safety and Health for Crop Protection Professionals

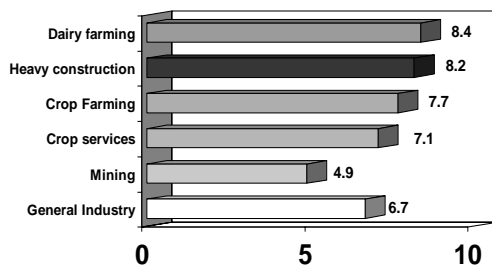
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## Outline

- Safety and health issues and contributing factors
- Job hazards
- Safety ideas
- Update on pesticide health effects
- Gloves
- Briefing and resources on “agro- and bio-terrorism”



## Injury & Illness Rates - by Industry Per 100 Workers



In Crop Services – 6,800 injuries/work illnesses, including 6,500 injuries with lost days away from work

## Not a Big Deal??

- Consider 60 foot post-emergence spray rig.
- Assume: 12.5 mph, spraying 10 hours a day, at 60% field efficiency.
- One day = about 550 acres
- At \$4.50 per acre = \$2,475 per day

## From 1996-1998 Surveys of 1200 Applicators

- 24% aware of personal injuries
- 15% aware of roadway equipment collisions

\*Awareness of events that had occurred where  
The respondent believed stress or fatigue was a factor

## Unique Features of Your Job

- Long hours
- Seasonal
- Complex equipment and operations
- Crabby customers
- Highway operation
- Typical “summertime” stressors (sports, vacations, time with family)

### **Safety -- It's More than an Attitude Issue**

- It's largely a "hardware" issue

### **Hazard Categories**

### **Wrap Points**

- Power shafts (drive shafts, PTO's, etc.)
- Gear, belt, chain drives
- Power + Speed = a deadly combination
- Warning – graphic slide coming

### **Stored Energy and High Pressures**

- Springs
- Compressed air
- Hydraulic systems
- High pressure fluids
- Not always an "obvious" danger

### **Crush Points**

- Booms
- Rollovers
- Articulated systems
- Highway collisions

### **Shear points**

- Booms
- Many issues with ag machinery

### Chemical exposure hazards

### What Are Some Specific Things You Can Do?

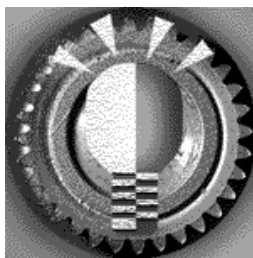
### Use Appropriate Tools and Equipment

- Tools for repairs
- Personal protective gear



### Shields and safety devices

### Lights and Marking for Roadway Travel



### ZMS

- Zero Mechanical State
- Bringing all sources of “energy” to a zero state
  - Moving parts, springs, pressures, etc.

### Falls

- Not very “sexy,” but a HUGE issue
- Good equipment (handholds, ladders, platforms)
- Keep stuff clean!!!!
- 3-point contact

### Know What to Do in an Emergency Situation

- Basic first aid
- CPR

### Employee Training

### Take Specific Measures to COPE With Stress

- We forget
- We make mistakes
- We do things in the wrong sequence
- We fall asleep



### Eating

### Get Enough Sleep & A Day Off Once in Awhile



### Planning

- Within your operation
- With your family
- Personal “needs”

### When The Going Gets Rough ----

- Stop
- Breath
- Think!!

### Health Effect “Update”

- Short-term, “acute” health effects – pretty straight forward stuff
- Label
- MSDS

### Long-Term Effects

- The major concerns (based on research activity)
  - Cancers
  - Reproductive effects
  - Neurological effects

### Cancer Issues Associated With Pesticide Exposures

- Important note!! Most studies show people engaged in ag-related work have lower total cancer rate...Why?
- Tobacco use; alcohol abuse; activity levels

### Exceptions

- Lip\*
- Skin
- Non-Hodgkins Lymphoma
- A few other relatively rare cancer categories



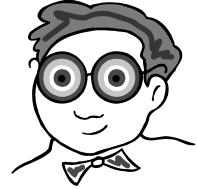
### Lots of Disagreement



- An area where lots of research has not led to this being a clearer issue
- Why?
  - Evaluating “exposure” very difficult (especially after 20 years or with dead people)
  - Mixed exposures
  - Different practices (based on equipment, crops, PPE use, etc.)
- A lot of work looking at 2,4-D and NHL, but still no consistent and firm findings

### Take Home Messages --

- We may never achieve the total clarity people are looking for.
- Long term effects are considered in regulatory process.
- Be on guard...Protect yourself..Use required PPE.
- Put the risks into perspective.



### Put Your Health Risks Into Perspective

- Some big ticket items:
- Smoking
- Blood pressure
- Inactivity
- Cholesterol levels
- Weight



### Gloves

### The Best Advice Your Mother Probably Gave You:

### Ag-Related Terrorism and Pesticides

- Interestingly, organophosphate insecticides are nerve agent – discovered during research during WWII
- More likely, technologies used within the ag industry would be used as a dispersal tool.

### **Some of the Issues**

1. Use of ag equipment to disperse an agent.
2. Use of an actual ag-related agent.
3. Tampering and contamination of product.
4. Introduction of a pathogen or other disease agent.

### **Items 1 through 3....**

- **Many of the same principles apply here.**
  - Secure facilities.
  - Secure equipment.
  - Inventory control.
  - Hire people with caution.
  - Report suspicious activities to local law enforcement.