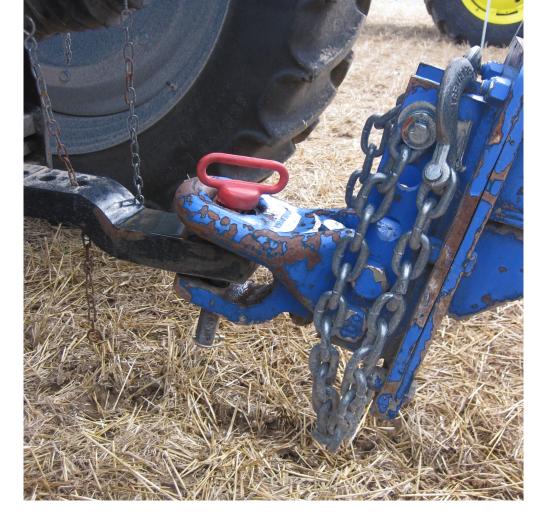
Tractor & Machinery Operations: Science of Stability



Outline

- Hazards and Risk
- Pre-operation
 Checks
- Tractor Operations



Hazards and Risk Assessment

Hazard

 Any existing or potential condition which, by itself or by interaction with other variables, can result in injury, illness, death or other loss.

• Risk

- A measure of the combined probability and severity of possible harm;
- mathematically risk is the product of: probability x severity

Tractor and Machinery Hazards

Tractors account for 1/3 of farm fatalities

50% of tractor related fatalities are from roll-overs

Runovers

Entanglements



Tools

- Risk Assessment forms

 SaferFarm
- Job Safety Analysis
- Preventive Maintenance checklist

saferfarm.org

SaferFarm.org – Farm Hazard Analysis Tool

Tractors

ROPS







Least Protection 1. No ROPS installed on the tractor or tractor with weather cab only. Item: ltem: ltem: ltem: ltem: 2. A modified or homemade ROPS. 01 01 01 01 01 3. Two-post ROPS. O2 O2 O2 O2 O2 4. ROPS cab with missing or improperly O3 O3 O3 O3 O3 shutting door or missing window glass; a 4post ROPS. O4 O4 04 O4 O4 5. ROPS cab with all glass in place and a door that shuts properly. O5 O5 O5 O5 O5

Most Protection



SaferFarm.org is a collaboration between the National Farm Medicine Center and Penn State University, supported by the following funding: CDC-NOSHU54-OH009568 National Children's Center for Rural and Agricultural Health and Safety; CDC-NIOSH U54 OH010170 Upper Midwest Agricultural Safety and Health Center. See Saferfarm.org for more information.

Farm:

Date:

Inspector:

Youth Rules

- Department of Labor
 - $_{\circ}\,$ Wage and Hour
- Hazardous occupations in agriculture
 - $_{\circ}$ Age 16 or older
 - Exemptions
 - Tractor and Machinery 14-15 year old youth
 - Must be trained and certified by Agriculture teacher or Extension
 - Parent owned farm
 - Student-learner

Pre-operation Inspections

- Review
 - ground conditions, terrain, obstacles
- Complete visual inspection of equipment
 - ∘ Lights
 - Brakes
 - Steering
 - Tires
 - \circ Fluids

Operating the Tractor

- Roll-overs hazard
 Side
 - Rear
- Run-overs hazard

 Bystanders
- Falls
- Noise
- Eye Injury
- Entanglement



Safe Operations

Always face the tractor for mounting and dismounting. Use three points of contact. Never jump from the tractor.

Fasten Seat Belt (ROPS equipped tractor)

Avoid ditches, embankments, and holes

Reduce speed when turning, crossing slopes, and on rough, slick, or muddy ground

Stay off slopes too steep for safe operation



Safe Operation

Watch where you are going

No riders

Avoid jerky turns, starts, and stops

Hitch properly (Drawbar and threepoint)

Set brakes securely when stopped (parking brake)

