What's the problem? Facts about Kentucky Farm Tractor Overturn Deaths and Their Prevention

A CDC /NIOSH Public Service Project for Kentucky's Farm Communities

September 2000

Something good is happening

- What?
 - A public service project for your county
- Why?
 - To save farmers and their loved ones from being killed or injured
 - To save them money
 - To provide peace of mind



University of Kentucky, Community Partners for Healthy Farming ROPS Project (9-2000)

These 76 Kentucky farmers died in tractor overturns in 1994-99.

Another 32 farmers died when they fell off moving tractors.



ROPS & seat belts could have saved 108 lives*

\Rightarrow	Tractor overturns	76
⇒	Thrown from tractor and run over	25
\Rightarrow	Thrown from tractor but <u>not</u> run over	7
\Rightarrow	Highway motor vehicle & tractor collisions**	2
\Rightarrow	Total deaths	110
⇒	Potential lives saved by ROPS & seat belts	108

- * KY Fatality Assessment and Control Evaluation (FACE) data 1994-99.
- ** These two collisions involved large vehicles traveling at high speed. ROPS and seat belts might not have prevented these two deaths.

Project goals

- To increase the number of ROPS and seat belts on farm tractors
- To encourage retirement of older tractors without ROPS or restrict them to jobs with less chance of overturns
- To promote other safe tractor practices (e.g., no extra riders, use of slow moving vehicle [SMV] signs, etc.)

What's a ROPS?

ROPS - Rollover Protective Structure

During an overturn a ROPS and seat belt hold the operator in a "frame of safety."



Demonstrating how a ROPS works



How a ROPS and seat belt work



A fastened seat belt holds the operator on the tractor seat.



During an overturn the operator stays within the ROPS "frame of safety."

Living dangerously (no ROPS, no seat belt)



An overturn without a ROPS



Overturns without ROPS are deadly



Without a ROPS and seat belt the operator is unprotected during an overturn.

During a recent six-year period, 76 Kentucky farmers died when their tractors overturned. ROPS and seat belts could have saved all 76.

Partially protected (ROPS but no seat belt)



Why fasten the seat belt?



Effectiveness of ROPS & seat belts

Together ROPS and fastened seat belts are 98% effective in preventing injury and death during tractor overturns.



A ROPS alone greatly reduces the risk of being killed during an overturn compared to a tractor without a ROPS. Add a fastened seat belt and the operator is usually not injured in an overturn.



In this case, the ROPS saved his life. A buckled seat belt would have saved his legs, huge medical bills, and a permanent disability.

Kentucky farmers at risk-1994

- In 1994, the KY fatality rate in Ag/Forestry/Fishing was 3.1 times the national rate.
- In KY, nearly all of these deaths were farming related.



Kentucky farmers at risk-1995

- In 1995, the KY fatality rate in Ag/Forestry/Fishing was 3.5 times the national rate.
- In KY, nearly all of these deaths were farming related.



Kentucky farmers at risk-1996

- In 1996, the KY fatality rate in Ag/Forestry/Fishing was 2.8 times the national rate.
- In KY, nearly all of these deaths were farming related.



Tractor-related farm deaths



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Total Annual Farm Injuries



KY has more than 5,000 farm injuries per year.

More than 1,100 involve farm tractors

Farm tractor-related injuries

Age and ROPS status of KY tractors

% Tractors



Based upon examination of 282 tractors from a random sample of 149 farms with principal operators age 55 years or older Taken as a whole, the bars represent all of Kentucky's working farm tractors. Each bar is the percent of tractors manufactured in a given fiveyear period.

The dark portions of the four bars represent the 29% of tractors equipped with ROPS. When these tractors overturn, the driver is seldom injured.

The light gray portions of all the bars represent the 71% of tractors without ROPS. When these tractors overturn the driver is often seriously injured or killed.

Lifetime chance of an overturn

- I in 9 Kentucky farmers age 55 or older have overturned a tractor and lived
- I/3 of these survivors have had two or more overturns
- many of these persons were injured
 - some received minor injuries
 - some received severe injuries
 - some were permanently disabled

Farms with children ages 11-17

- Farms less than 60 acres
- Farms with only one tractor
- Farms greater than 214 acres

- ▲ 3/4 have no ROPSequipped tractors
- ★ 3/4 have no ROPS on the tractor
- ▲ 3/5 have at least one tractor with a ROPS

Many children who live on small farms are at risk. Children typically start driving tractors at age 10.

Children ages 11-17 years at risk on Kentucky farms



ROPS-equipped tractors by farm size and number of tractors

- Farms less than 60 acres
- Farms greater than 214 acres
- Farms with only one tractor
- Farms with four tractors

- ↓ 1/3 have no ROPS on the tractors
- ↓ 1/3 have no ROPS on the tractors



Are ROPS cost effective?

- A study at UK found medical costs from a severe overturn injury can be \$140,000 +
- Tractor overturn
 fatalities and serious
 injuries often result in
 loss of the farm
- A ROPS is a onetime cost < \$1,000</p>



Your advice and help is needed

- In your interactions with farmers, what would convince them to get ROPS?
- What are some key times, events, and ways to promote ROPS and seat belts?
- Who should be involved and why?
- What's in it for them (and for you)?
- In what ways can these materials be used in your community?

Local community organizations: How can they help?

- Radio and TV stations
- Equipment dealers
- Insurance services
- Farm service & supply
- Financial services
- EMS (Fire & Rescue)
- Farm organizations & commodity groups (Farm Bureau; Dairy, Cattle, Tobacco producers; etc.)

- Health care providers
- Farm women groups
- Farm youth groups
- Local employers (manufacturing plants, printing firms, utilities, cooperatives, etc.)
- Schools and teachers
- Rural development agencies
- Others?

The ROPS project team

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The project staff conducted injury surveillance and program development.

The community partners helped to develop and and deliver the community education program.

The data provided in this presentation were collected by University of Kentucky researchers.