



SEVERE WEATHER

HOSTA Task Sheet 2.5

NATIONAL SAFE TRACTOR AND MACHINERY OPERATION PROGRAM

Introduction

Agricultural work must be done during various weather conditions. Farm work does not stop for summer heat or winter cold. Crops must be harvested, livestock must be tended, and every daily routine completed. Hot, cold, rain or shine, the work continues. Safe work still must be observed under any weather-related conditions.

This task sheet will discuss how to recognize severe weather and the effects of such weather on the farm worker. Additional task sheets in Section 2.5 will present safety precautions for heat, cold, sun exposure, lightning and wind storms, and rain.

Summer Weather

Crop production activities begin with the arrival of the summer season. This is the time of year to expect higher temperatures, higher humidity, thunderstorms, lightning, and tornadoes. Attention to safe work practices may not permit attention to weather hazards. See Task Sheet 2.5.1.

High Temperatures—Exposure to high summer temperatures can cause illness. Heat cramps, heat exhaustion, and heat stroke are serious problems.

- Heat cramps—Symptoms are

leg and stomach cramps.

- Heat exhaustion—Symptoms are cool, moist, pale or flushed skin, headache, nausea, dizziness, weakness, and exhaustion
- Heat stroke—Symptoms include red, hot, dry skin; changes in consciousness; rapid, weak pulse; and rapid, shallow breathing. Heat stroke can result in death if not treated immediately.

High Humidity—Excessive humidity means that moisture evaporation slows down. Perspiration helps to cool the body as it evaporates. In high humidity, the body continues to lose moisture, but the cooling effect is not felt.

Thunderstorms and Lightning—Cold-weather fronts bring cooler air into contact with warm air masses. Severe thunderstorms result; lightning can happen. On average 93 persons are killed each year by lightning.

Tornadoes—These small but violent storms can pack up to 250 mph wind gusts. They usually follow dark skies with clouds that look like a wall and wind that sounds like an approaching freight train. Tornadoes kill people and can cause millions in property damage.



Figure 2.5.a. Summertime forecasts of extreme weather must be heeded. Attention to machine safety is a top priority, but changing weather conditions must be observed as well.

Severe
weather can
occur anytime
of the year.

Learning Goals

- To recognize the effect that severe weather plays in safe work practices

Related Task Sheets:

The Work Environment	1.1
Heat and Sun	2.5.1
Cold Weather	2.5.2
Lightning, Tornadoes, and Rain	2.5.3

Winter Weather

Winter chores on the farm must be done regardless of the weather. Winter cold brings different hazards. Frostbite, hypothermia, and loss of traction leads to hazardous work conditions. See Task Sheet 2.5.2.

Frostbite– This health hazard occurs when body tissue freezes. Medical attention is needed as soon as possible.

Hypothermia– This health issue involves a general cooling of the entire body. When the body cools down, normal processes cease to function properly. Gradual warming of the victim is necessary,

as well as immediate medical treatment.

Loss of Traction– Winter weather affects footing—for both people and animals. Tractors that can pull heavy loads under normal circumstances now slip and slide. Observing extra care and taking extra time in moving machinery, livestock, and ourselves becomes more important on slippery surfaces.



Figure 2.5.b. Winter weather brings a different set of rules for work. Attention to farm chores may cause the worker to forget that the air is icy cold and that the skin can freeze.

Frostbite
destroys
body tissue.

Safety Activities

1. Call your nearest TV or Radio weatherperson and ask for an explanation of humidity in the atmosphere.
2. Use the Internet to define heat index (apparent temperature).
3. Use the Internet to define wind chill.
4. Contact your local emergency preparedness officials to learn what signals or warning sirens are used in your community to announce impending weather or other emergencies.
5. With your family, develop an emergency action plan for dealing with high wind or tornado conditions. Practice the plan at least once per year with the entire family.

References

1. *Safety Management for Landscapers, Grounds-Care Businesses and Golf Courses*, John Deere Publishing, 2001.
2. www.iastate.edu/Click on Agriculture and Natural Resources/Click on Extension Publications/Click on Safety/Scroll to PM1563i Severe Weather Tips for Farmers, December, 1994.

Contact Information

National Safe Tractor and Machinery Operation Program
The Pennsylvania State University
Agricultural and Biological Engineering Department
246 Agricultural Engineering Building
University Park, PA 16802
Phone: 814-865-7685
Fax: 814-863-1031
Email: NSTMOP@psu.edu

Credits

Developed, written and edited by WC Harshman, AM Yoder, JW Hilton and D J Murphy, The Pennsylvania State University. Reviewed by TL Bean and D Jepsen, The Ohio State University and S Steel, National Safety Council. Version 4/2004

This material is based upon work supported by the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture, under Agreement No. 2001-41521-01263. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.