

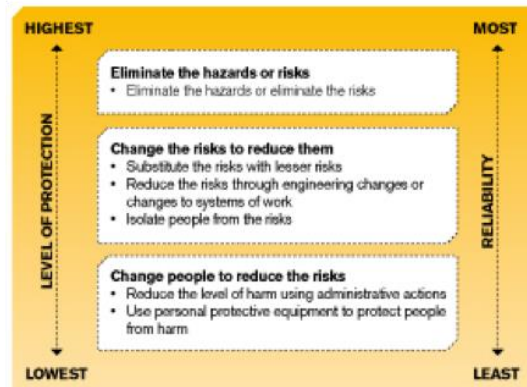
RISK ASSESSMENT TOOL

User's Guide

Risk assessments are an integral element in the establishment and maintenance of an effective Environmental Health and Safety program. This tool provides Department Heads, faculty, and staff within the K-State College of Agriculture a means to periodically assess, prioritize, and mitigate hazards in their respective work environments. The College of Agriculture's EH&S Office can assist in assessing risk and encourages staff to contact our Office.

What this tool provides you is a clear picture of the risks with your department, unit, or Research Center. And by having a robust risk assessment program in place, you reduce the likelihood of employee injuries and illnesses, and environmental releases. You will also see benefit during any regulatory inspections by having programs and practices in place that you can showcase to the agency.

Risk is prevalent in the tasks we perform, and understanding what those risks are and how to reduce those risks are critical to managing environmental health and safety exposures. This tool can provide you the overarching assessment strategies for managing those risks.



The College of Agriculture EH&S Office encourages you to incorporate this **three-step** tool into your EH&S risk assessment toolbox.

RISK ASSESSMENT TOOL

This risk assessment tool is best used when all relevant hazard information is used by the stakeholders to **identify** and **prioritize** health, safety, and environmental hazards in a work area. The Department Head, faculty, and staff can **mitigate** risks in their respective work environment using this tool.

| STEP I: With relevant hazard information, e.g., SDSs, identify the risks. | | | STEP II: Use the Risk Assessment Matrix to prioritize the risks. | | | | |
|---|-------------------------------------|---|--|------------|--------------------|------------------|--------------|
| Hazards | How are you exposed to this hazard? | Given the exposure, what is the negative outcome? | Severity | Likelihood | Risk Determination | Control Measures | Action Level |
| | | | | | | | |
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Simplified H&S Risk Assessment Matrix

Severity Likelihood Risk Determination Number
Risk Determination Number Control Measures ACTION LEVEL

| I. SEVERITY | | | | | | |
|-------------|----------------|--|---|---|-----------------|---------------------------------------|
| Pt | Severity Level | Workplace Safety | Workplace Health | Environment | Institution | Downtime Incurred |
| 5 | Critical | Fatality, single or multiple | Acute poisoning, failure of major bodily functions | Environmental release | >\$10M damages | >1 year for full operational status |
| | | Permanent body injury or loss of use for more than 30 days | Infection with unknown cure | Release outside operating unit area | | |
| 4 | High | Injury requiring 30 days of hospitalization and/or medical leave | Moderate exposure, reversible injury to bodily functions with prolonged recovery | Environmental release | >\$1M damages | >3 months for full operational status |
| | | Temporary body injury or loss of use for more than 10 days but not exceeding 30 days | Infection with known cure, but extensive treatment | Release outside building area, but within operating unit area | | |
| 3 | Medium | Injury requiring 10 days of hospitalization and/or medical leave | Mild exposure, reversible injury to bodily functions with less than 30 days recovery | Spills outside work area, but within building | >\$100k damages | >1 month for full operational status |
| | | Temporary body injury or loss of use for up to 10 days | Infection with known cure, but extensive treatment | Release outside work area, but within building | | |
| 2 | Low | Injury requiring maximum of 3 days of medical leave only | Very mild exposure, reversible injury to bodily functions with less than 30 days recovery | Spills outside work area, but within work area | >\$10k damages | >5 days for full operational status |
| | | Temporary body injury or loss of use for 3 days or less | Infection with known cure, but treatment needed | Release outside work area, but within work area | | |
| 1 | Negligible | First aid treatment only | Very mild exposure, reversible injury to bodily functions with less than 30 days recovery | Spills within workplace only | <\$5k damages | No significant downtime |
| | | No or superficial injury | No exposure | No release with no effects within workplace | | |

| II. LIKELIHOOD | | |
|----------------|------------------|--|
| Pt | Likelihood Level | Likelihood of Occurrence/Exposure Criteria |
| 5 | Frequent | Likely to occur daily |
| 4 | Moderate | Likely to occur weekly |
| 3 | Occasional | Might occur monthly |
| 2 | Remote | Might occur yearly |
| 1 | Unlikely | Unlikely to occur |

III. RISK DETERMINATION

| METRICS | | SEVERITY | | | | |
|------------|----------------|----------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------|
| | | Critical (5) | High (4) | Medium (3) | Low (2) | Negligible (1) |
| LIKELIHOOD | Frequent (5) | 25 Operation Not Recommended | 20 Operation Not Recommended | 15 High Priority | 10 Review at Appropriate Time | 5 Risk Acceptable |
| | Moderate (4) | 20 Operation Not Recommended | 16 Operation Not Recommended | 12 High Priority | 8 Review at Appropriate Time | 4 Risk Acceptable |
| | Occasional (3) | 15 High Priority | 12 High Priority | 9 Review at Appropriate Time | 6 Risk Acceptable | 3 Risk Acceptable |
| | Remote (2) | 10 Review at Appropriate Time | 8 Review at Appropriate Time | 6 Risk Acceptable | 4 Risk Acceptable | 2 Risk Acceptable |
| | Unlikely (1) | 5 Risk Acceptable | 4 Risk Acceptable | 3 Risk Acceptable | 2 Risk Acceptable | 1 Risk Acceptable |

Review the risk assessment records every year or whenever there are changes in processes or personnel, work activities or on any incident occurrence, whichever is earlier.

IV. CONTROL MEASURES

| Pt | Control Level | Control Effectiveness |
|----|---------------|---|
| 5 | None | Plan is not developed and no training has occurred. |
| 4 | Poor | Some resources have been expended to start the process. |
| 3 | Fair | Controls are in place, but needs to be updated or training needs to occur. |
| 2 | Good | Controls are in place and training has occurred, but action items need to be addressed. |
| 1 | Prepared | Controls are in place and plans are current. Training and assessments are conducted on a routine basis. |

V. ACTION LEVEL

| Color | Score | Risks | Action |
|--------|--------|----------|---|
| Red | 80-125 | Critical | Operation Not Recommended Stop operation & review controls. If necessary, terminate experimentation. |
| Yellow | 50-75 | High | High Priority Remedial Action Proceed with extreme caution with present conditions. Implement additional secondary controls immediately. Review within 7 days. Emergency control measures should be in place. |
| Blue | 20-48 | Medium | Take remedial action at appropriate time Proceed with care. Additional controls advised. Review should be implemented within 30 days. |
| Green | 1-16 | Low | Risk Acceptable: Residual Risk If possible, risk reduction should be considered. There are no imminent dangers. Frequent review should be in place especially changes in procedures, staff, materials, or environment. |

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Controlled documents are maintained electronically.
Printed documents are UNCONTROLLED.
Prior to being printed, document verify that it is current.

KANSAS STATE UNIVERSITY
College of Agriculture

RISK ASSESSMENT TOOL

Risk Mitigation Steps:

1. Use the **Hierarchy of Controls** to document the hazards and the corresponding control measures) involved in each step of the Standards of Practice.
2. Consider **Elimination or Substitution** of hazards, if possible.
3. **Engineering Control(s)** are used to isolate the hazard from the user (e.g., fume hood, biosafety cabinet).
4. **Administrative Control(s)** are Standards of Practice/programs that limit the exposure to the hazard (e.g., authorizations, designated areas, time restrictions, training).
5. **Personal Protective Equipment (PPE)** include specific material requirements, if applicable (e.g., flame resistant lab coat, type of respirator or cartridge).
6. **Training** includes task specific training requirements (e.g., forklift, aerial lift, back safety)

| STEP III: Identify appropriate engineering and/or administrative controls, required PPE, and necessary competency training. | | | | |
|---|------------------------|---------------------------|--------------|--------------------|
| Hazards | Engineering Control(s) | Administrative Control(s) | Required PPE | Necessary Training |
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