

## Equipment Safety in the Shop on the Dairy

### Introduction

According to the Bureau of Labor Statistics, there were 26 fatal work-related injuries on dairy farms per 100,000 full-time equivalent workers in 2009. Shops are the scene of many accidents to hands and eyes. Hazards exist in the shop on a dairy and can result in an incident such as burns, electric shock or worse. Improper use of hand and power tools can result in lacerations and contusions. Improperly grounded power tools or frayed power cords can result in shock. In addition, unguarded machines or power tools can result in serious injuries. Last, welding can result in burns, fires or explosions if safe work practices and safety rules are not followed.

### Hand Tools and Power Tools

There are a variety of tools used in shops on the dairy which include bench grinders, drill presses and cutting tools. The cause of the injuries tend to be improper use of equipment. Also, equipment in poor condition such as frayed cords can result in electric shock. Another cause of injuries is failure to lock or block out equipment during repairs or maintenance. Failure to wear eye protection can result in eye injuries when cutting or grinding.

It is important to train employees on safe work practices and safety rules. In addition, complete safety inspections of the shop. This should include hand and power tools to reduce the potential for injuries. A safety inspection checklist will assist in identifying hazards to eliminate them before an incident occurs.

### Follow safe work practices

#### Equipment

- Use tools for their intended purpose. For example, use angle grinders only for grinding and not for cutting. Safer power cutting tools are available.

- Always wear safety glasses or a face shield when eyes are at risk.
- Never cut or grind containers that have previously contained flammable or toxic substances.
- Use clamps and vises to hold job items where possible.
- Ensure that bench grinders, drill presses, and similar equipment are adequately secured to the table or floor.
- Ensure guards cover approximately three-quarters of the grinding wheel.
- Use jack stands whenever equipment or machinery has been lifted off the floor in the shop, out on the dairy, or in the field.

#### Machine Guarding of Moving Parts

- Ensure all guards and shields are kept in place.
- Lock or block out equipment to prevent movement or exposure to moving parts when service or repair work is conducted.
- Ensure grinders have tool rests for the grinding stones which are adjusted to 1/8 inch or less from the stone.

#### Electrical

- Ensure portable power tools are double insulated or of three-wire grounded type.
- Replace frayed extension cords and damaged plugs. Never splice power cords.
- Maintain clear access to circuit breaker boxes and electrical panels.

- Ensure ample electrical supply so power tools can be operated without blowing fuses or tripping circuit breakers.
- Do not overload electrical outlets.

### **Practice good housekeeping**

Maintaining work areas clean and clear of debris can reduce the potential for an injury significantly. Good housekeeping standards prevent slip, trip and fall hazards. Also, ensure there is adequate working space for each job. Last, keep walkways and exits clear.

### **Welding**

Hazards associated with welding include burns from extreme temperatures and ultraviolet and infrared rays. The arc reaches extreme temperatures and produces intense ultraviolet and infrared rays that can be harmful to both the welder and bystanders. Exposure to ultraviolet light leads to a condition called "arc eye," a severe burn to the eyes. Fires and severe burns can result from metal fragments and sparks. Explosions can occur from welding or heating empty or leaking containers. Exposure to metal fumes and welding gases can result in illness. Last, lack of insulation or proper grounding in electrical welding equipment can create electrical hazards.

It is important to train employees on safe work practices and safety rules. In addition, welding equipment should be incorporated into the safety inspections of the shop. During the safety inspections focus on unsafe work practices as well as unsafe conditions. Safety inspections are an effective approach to identifying hazards before an incident occurs.

### **Follow safe work practices**

#### Heat

- Provide appropriate clothing and eye protection to prevent damage to eyes and unprotected skin.
- Never weld or heat empty containers as explosions may occur.
- Provide appropriate gloves and protective clothing to protect the skin from hot surfaces, metal fragments and sparks.

- The risk of electric shock in welding is high. All electrical hazards should be identified and addressed.
- Leaking gasses can cause fires and explosions. Ensure the supply is turned off after completion of welding activities.

#### Gas welding and cutting

- Fit flash back arrestors at each cylinder and at the hand piece. Store oxygen separate from flammable gasses.
- Properly store and secure all gas cylinders from falling.
- Do not allow any fitting of gas welding equipment to be contaminated by oil or grease.
- Do not use lighters or matches; use a flint lighter or piezo electric lighters.
- Allow welding only in ventilated areas. Welding in confined spaces should be avoided. Use an exhaust system if available.
- Make sure flammable and combustible materials, like oil rags, are kept safely away.

#### Electrical

- Ensure personal protective equipment and clothing is provided and used e.g. helmet with suitable grade of lens, gloves, apron and fire resistant clothing.
- Ensure welding shield is down before striking an arc.
- Install welding screens around the work area.
- Plan the work first and clean up the area.
- Never attempt to connect or change welding cables before switching off the main power.
- Always install the welding unit as close as possible to the power point.
- Use only cables that are insulated throughout their entire length. Voltage can seep through thin areas and cracks.

- Keep terminals clean and tight.
- Work on a well-insulated floor where possible and wear rubber-soled boots.

### **Practice good housekeeping**

Maintaining work areas clean and clear of debris can reduce the potential for an injury, fires and explosions significantly. Also, good housekeeping standards prevent slips, trips and falls.

### **Summary**

Serious and sometimes fatal injuries can occur on a dairy. In many cases, equipment in the shop is the cause. The goal is to train your employees on the hazards and safe work practices to ensure understanding. In addition, inspections can go a long way in identifying potential problems early so that the hazard can be eliminated. Last, develop safety rules and enforce them to prevent injuries. Remember, that every incident is predictable, preventable and unacceptable.

For additional information or assistance, contact your Zenith Safety and Health consultant.

Zenith provides workplace safety resources at: **TheZenith.com** 4v2.2(1/12) DYFM 3

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