

Safety Hazard Analysis and Corrective Measures for Koot Dairy

A Senior Project

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Bachelor of Science

By

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ABSTRACT

The objective of the study was to determine any potential safety hazards at Koot Dairy in order to prevent injuries and lawsuits. A hazard walkthrough was performed with employees to help discover hazards and determine the correctible actions that must take place. A farm safety checklist was used to assess some of the most common dairy hazards and to ensure law compliance. The checklist included many potential areas of hazard—first aid and emergency, power and electrical, farm equipment and machinery, farm chemicals, fuel tanks, confined spaces, environment, and workplace policies. After implementing the checklist, it was clear as to what equipment would be needed to carry out the proper protocols. In this study, warning signs were purchased and placed around the dairy farm in areas that lacked proper posted signs. Workplace policies were created to help prevent potential lawsuits. Methods for policies and corrective action were observed in various government websites including the Department of Industrial Relations, the United States Department of Labor, as well as various dairy safety guideline websites. The checklist resulted in many potential risks being observed. Hazards were observed in all areas and they were all assessed and a plan to impede the risk was put in place. The study prevented many hazards but follow up work is essential and safety assessments will need to be done on a regular basis as hazards are constantly formed.

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INTRODUCTION

Agriculture in America is a booming and lucrative industry. Farmers are constantly renovating and expanding their farms in order to amplify profitability. Farm life is commonly perceived by the public as a place of hard work and good health. However, many do not realize the many safety and health hazards that are attributed with the agricultural industry. Agriculture is the most dangerous industry in the United States, as most injuries occur from machinery and livestock (Von Essen and McCurdy, 1998). Dairy farms are especially susceptible to risks as they are involved in both the use of heavy machinery as well as injury from farm animals. As farms continue to grow in size, an increase in employees is a necessity. But with more employees comes a higher incidence of employee sickness and injury on the job. Many of these employees are non-English speaking which increases the difficulty in ensuring safe practices in the workplace. Many farmers are being stricken with multi-million dollar lawsuits associated with employee injuries and sicknesses, but many of these lawsuits may be avoidable with proper prevention programs in place like hazard assessment and safety planning. The objective of the study was to determine any potential safety hazards at Koot Dairy in order to prevent injuries and lawsuits.

LITERATURE REVIEW

The Dangers of Dairy Farming

Farming is commonly perceived an industry of hard work and good health; however farming presents numerous risks and hazards in every field of employment in the industry. Farm workers are constantly exposed to these risks every day. Dairy farming is one of the most hazardous industries as it presents both the hazards of farming as well as the risks of injury when working with dairy cattle (Mitloehner and Calvo, 2008). Safety hazards on dairy farms are prevalent and some of these include hazards such as chemicals, fuel tanks, tractors, livestock, dust, machinery, electrical, as well as numerous others.

The farming industry sadly appears to get more dangerous with time. From 2009 to 2010, the fatalities of agricultural workers increased by nearly 23%, with an increase of 127 fatalities in 2009 and 156 in 2010. In 2010, average fatalities for workers in all U.S. industries were 3.5 per 100,000 (Bureau of Labor Statistics, 2010). In 2010, average fatalities for workers in the agriculture industry were 26.8 per 100,000 (Bureau of Labor Statistics, 2011). Comparing the national industry average fatality rate of 3.5 with the agricultural average fatality of 26.8 displays how much more dangerous agriculture is than other industries (Figure 1). Comparing these statistics, the fatality rate in agriculture is nearly eight times the national industry fatality rate average.

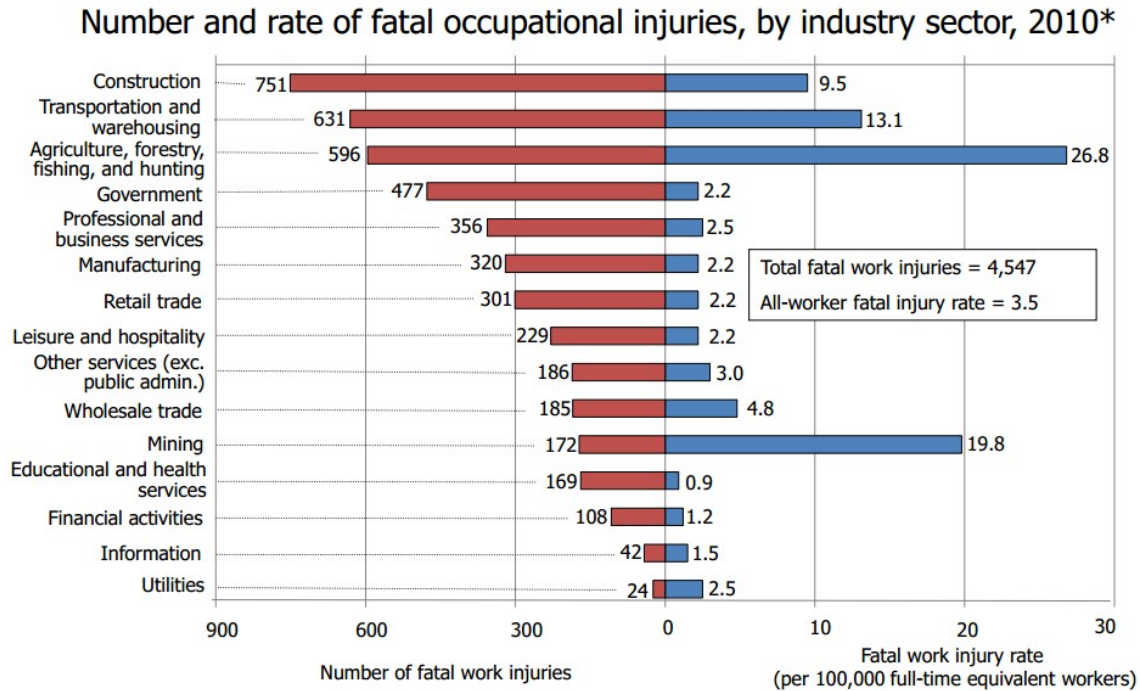


Figure 1. The significantly higher fatality rate in agriculture compared to other industries (Bureau of Labor Statistics, 2011).

Every year dairy farms are becoming larger and more concentrated in order to increase economic efficiency (Mitloehner and Calvo, 2008). As these farms increase in animal size and concentration, this will enhance close contact with large animals and create new hazards for employees. This constant contact between employees and cattle leads to a high risk of injury. There is a 20 fold increased risk for injury with milkers working more than 30 hours per week with cows (Boyle, et al., 1997). It is a crucial part of management to train workers in proper livestock handling practices. With proper training, many injuries may be prevented (Mitloehner and Calvo, 2008).

The most common causes of death and injury on dairy farms are farm machinery and animals (Mitloehner and Calvo, 2008). Research shows that deaths from farm

machinery are often related to tractor rollovers, being run over, and getting caught in rotating shafts. Common animal related injuries were often kicks, or being crushed between an animal and another object (Mitloehner and Calvo, 2008). Dairy cows and bulls can be very unpredictable and caution should always be taken when in close proximity with them. Preventative measures must be taken to lower the incidents of death and injury.

A case study was conducted to identify the most common injuries on dairy farms in five states: Minnesota, Wisconsin, North Dakota, South Dakota, and Nebraska. Some of the operation activities observed were, milking, feeding, foot trimming, treatments, among others. It was found that milking has the highest risk for injury. In the case study, 38 people were injured milking, 21 injured feeding, 6 injured by dehorning, 1 injured by calving assistance, and 2 injured during cattle treatment (Boyle et al., 1997). Working in the milk parlor is a dangerous job since employees are continually in close contact with cattle, which may result in suffering a kick or potentially being stepped on. While milking did result in the most injuries, even jobs not commonly associated with risks, like dehorning, resulted in a fair amount of injuries reported. It is obvious that dairy farms present risks in all areas of work and no place is a safe haven for employees. Every job on the dairy should be taken with extreme caution and employees must be properly trained.

Hidden Costs of Occupational Injuries

Farmer's and all good business owners have a goal to maximize profits and in order to do this, farmers often place most of their time and effort in producing the most

food with the least amount of money. Many safety and health preventative measures are overlooked by producers as their main concern is primarily producing their product as inexpensively as possible. Ensuring a safer work environment may cost the owner, but the cost to ensure employee safety will greatly outweigh the cost if a farm injury or fatality is prevented. The financial cost of an on farm employee injury is extremely high. In recent years the cost of agricultural injury is immense, estimated at \$4.57 billion. The direct costs of these injuries were approximately \$1.66 billion and indirect costs nearly \$3 billion (Figure 2). The main direct costs were medical and insurance costs while the indirect costs included lost earnings, lost benefits, and training (Leigh et al., 2001). No matter how safe a farm is kept, there will be some unavoidable injuries but many can still be prevented and can save thousands of dollars in potential lawsuits and worker's compensation fees.

Costs	\$US (billions)
<u>Direct</u>	1.640
Medical	1.279
Administration for medical insurance	0.246
Administration for indemnity insurance	0.115
<u>Indirect</u>	2.933
Lost earnings	2.204
Lost fringe benefits	0.355
Lost home production	0.304
Training, re-staffing	0.070
Total	4.573

Figure 2. The direct and indirect yearly costs of agricultural injuries (Leigh et al., 2001).

While production is very important, safety and health are directly intertwined. If an employee is sick their productivity will fall as well as the farms profits. One workday injury has many hidden costs. According to the California Department of Industrial

Relations, these indirect costs may include productivity lost by employees and supervisors, the time to find or train other employees to cover for the injured worker, the cost of any damaged equipment, compensation for the injured employee, lower employee efficiency, and possible increased worker's compensation rates as well as many other possible costs (Department of Industrial Relations, 2005). Finding a relief employee in the case of an injury can be a difficult and stressful task to a manager. There are many tasks on farms that often take years to perfect, and finding a good replacement is often impossible. For example, if a milker is injured and a replacement is desperately needed, a manager may hire a subpar replacement which may result in improper milking procedures. These inconsistencies may result in many hidden costs like milking mastitis cows, slower milking, as well as many other potential costs. The time to train these new relief employees takes time from managers that are often busy with many other tasks. Employee efficiency will often decrease when a work day injury occurs as many employees may stop working to help the injured person and this will interrupt the workplace.

It is obvious that even a minor injury forcing a worker to leave for a small amount of time will result in a large amount of hidden costs on the farm. These hidden costs are like an iceberg as the only visible portion is above the water but beneath the water it may be exponentially higher (Figure 3). The indirect costs of an agricultural occupational injury will likely be exceptionally higher than those of direct costs (Worker's Compensation Fund, 2009).

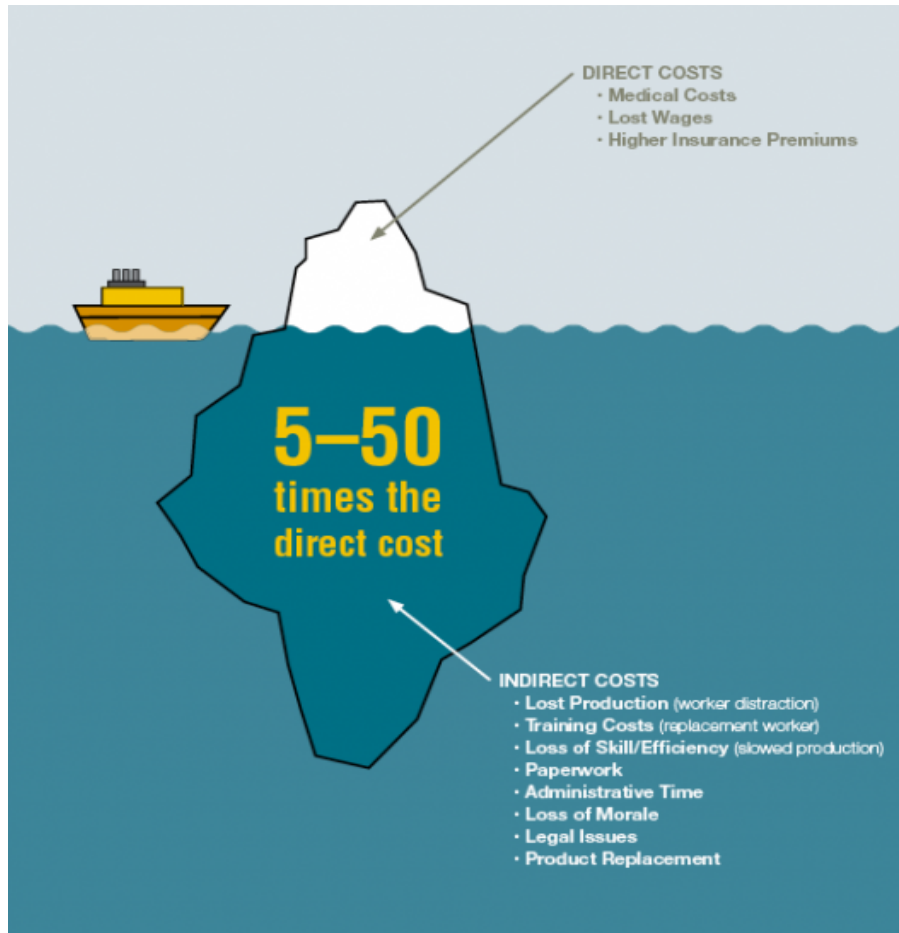


Figure 3. The high indirect costs of occupational accidents (Worker's Compensation Fund, 2009).

Safety Management Programs

According to the California Occupational Safety and Health Act of 1973, employers in California have a legal responsibility to provide a safe and healthy working environment for all employees. Developing programs to enhance safety is an important obligation for every employer (Department of Industrial Relations, 2005). Ensuring a safer working environment may be achieved by many ways.

According to *Dairy Farm Safety and OSHA*, a quality management program should include:

“owner/manager commitment, safety communications systems with employees, a system for assuring employee compliance with safety work practices, scheduled inspections/evaluation system, accident investigation, procedures for correcting unsafe/ unhealthy conditions, safety and health training and instruction, and recordkeeping and documentation” (Doughrate, 2011).

Owners and managers have a responsibility to do all they can to create a workplace that is as safe as possible. With so many various tasks and problems brought on while running a dairy farm, it is often easy to forget about the importance of safety. Owners and managers must keep safety just as much of a main concern as production.

Safety communications are a necessity with employees. Whether they are taught safety through meetings, papers, or other methods, it is important to be sure they understand and acknowledge what they are taught. Many farm employees are not English speaking, so posters or handouts should be written in their own language to ensure they understand exactly what is being communicated to them. Communication is key in providing a business with proper safety planning and procedures.

Employees must conform to safety work practices, but many do not. To ensure that employees abide by safe practices, owners must be sure that all employees have the proper training to carry on day to day tasks in the safest way possible. Retraining is even a possibility to ensure the safest working environment possible. Training must be given to

all new employees and any new to a job assignment, as well as anytime new procedures, substances, or equipment are brought into the job site (Western Center for Agricultural Health and Safety, 2010).

Procedures for correcting unsafe or unhealthy conditions should be implemented for proper safety management. Hazards should be corrected immediately when identified. If they cannot be corrected quickly, consider the likelihood of an injury or health risk occurring from the hazard. Offer temporary protection to any employee who may be affected while the correction of the hazard is arranged (Department of Industrial Relations, 2005).

When an accident occurs on the farm, there are proper steps that should be followed. First ask what happened and describe exactly what took place in as much detail as possible. Then ask why the accident occurred. Determine if anyone was at fault and if procedures were handled correctly for the task. After the accident, it must be determined what type of action should be instituted in order to prevent a future one and an action should take place. This corrective action should prevent a new accident as well as advance the ease of the business (Department of Industrial Relations, 2005). Following these steps will ensure a better business by preventing any future incidents and provide a safer workplace for employees, resulting in higher employee morale and productivity.

Reducing hazards is a key component in minimizing occupational injuries. Dairy farms often present many hazards in the workplace and way to combat these hazards is to implement a hazard assessment on the dairy farm. On dairy farms, it is impossible to eradicate all hazards but there are many measures to reduce the instances of injury and

increase safety (Western Center for Agricultural Health and Safety, 2010). A proper first step in hazard identification is to complete a walkthrough around the dairy farm with the employees. Employees can help identify hazards in the workplace given that they are familiar with the areas they work and can help identify hazards they are often subject to on a daily basis.

One problem often encountered on dairy farms is communication. Many dairy farm employees speak primarily Spanish, and this presents safety hazards. According to the Occupational Health and Safety Administration, employers must give instructions to employees in a language that they understand. Providing paperwork and instructions to employees in a language they understand is an employer's job and will greatly decrease the risk of improper working procedures and injury (U.S. Department of Labor, 2010). One important way to effectively communicate with Spanish speaking employees and reduce the risk of injury is the use of interpretive signs.

Posting compliance signs is an important part in a business' safety program. Updating these signs and keeping them up with the current laws can create a safer workplace. Safety signs can help reinforce training and assist employees in hazard avoidance. Safety signs are acknowledged as the oldest kinds of safety equipment and assist in visually communicating safety information with employees of any language (Peckham, 2007). Visual communication promotes a safe working environment and solves the problem of language barriers between employees and management.

Using a safety checklist to identify hazards may create an easy way to identify common hazards on dairy farms. Checklists can create an easy safety overview of a dairy

farm and help discover common types of hazards and injuries occurring on farms. A checklist may help assist in demonstrating compliance and will act as a practical management tool (The People in Dairy, 2012).

MATERIALS AND METHODS

Methods for Hazard Identification

A critical hazard assessment is important for every dairy manager to perform on a regular basis. These assessments can be done in a variety of ways. Many methods to control risk of injury were found in different literature. Much of this literature came from peer reviewed journals as well as government agencies that provided useful ways to promote a safer working environment.

The critical assessment performed took place on a dairy farm in Chino, California. The dairy farm consisted of 1700 cows and included 14 full time employees. The dairy farm is over 40 years old and hazards are often abundant in older facilities.

The first step in the study was a basic identification of any hazards by doing a walkthrough around the dairy farm and listing any of these potential hazards. This was done by involving the employees in the assessment. The manager and milkers walked around the milk parlor to survey and identify any possible hazards that they felt may present a risk to the well being of anyone.

Outside of the milking parlor, another job to assess was tractor driving as it results in the most farm injuries. There are many different jobs on the dairy farm that consisted of tractor driving whether it is feeding cows with a mixer truck, unloading hay with a squeeze loader, manure removal with a large tractor, as well as many others. The high prevalence of death and injury during tractor accidents shows that following proper tractor safety must be enforced and certain protocols set in place.

Following a checklist presents an easy guide to ensure proper safety management. A dairy farm checklist template was followed which was created on the website www.thepeopleindairy.org (The People in Dairy, 2012). The checklist identifies some of the most common causes of injuries on dairy farms. This dairy farm safety report was used to determine any risk using parts of the safety report that can be applied to Koot Dairy as well as adding additional points learned through literature and governmental documents. If the dairy presented a conclusive risk, a proper corrective action in order to control that risk was implemented.

Materials Needed

Materials needed were determined after completing all assessments. Compliance signs that were deemed necessary were purchased from www.compliancesigns.com (Figure 4). The materials included were various protective chemical protective equipment, fire extinguishers, a first aid kit, ear plugs, a flashlight, skid tape, and dust masks (Figure 5). The equipment needed was purchased from the Home Depot.



Figure 4. Purchased compliance signs.



Figure 5. Purchased Safety Equipment

Table 1. Cost of Materials

Item	Quantity	Cost
Aluminum 10"x7" compliance sign	7	\$11.00
Aluminum 7"x5" compliance sign	2	\$7.00
Aluminum 14"x10" compliance sign	1	\$18.00
Plastic 14"x4" compliance sign	1	\$7.00
Fire extinguisher	3	\$17.97
3M First Aid Kit	1	\$9.97
2"x5" Anti Skid Tape	1	\$8.68
3M TEKK Nitrile Gloves	1	\$3.98
Eveready LED 6V Lantern	2	\$4.97
Chemical Impact Goggles	2	\$4.97
3M TEKK Hooded Coverall	2	\$2.97
Disposable Ear Plugs	4	\$2.87
Total Cost of Materials		229.84

RESULTS AND DISCUSSION

Hazard Identification Walkthrough

After completing hazard evaluation walkthrough with employees, hazards were observed. Many hazards observed were already covered on the checklist, but one that was not was the risk of slips and falls. In the milk parlor, employees observed the slippage hazard on stair steps. Anti-skid tread tape was placed over the stair steps to create a treaded surface (Figure 6). Anti-skid tread tape was also placed over the steps of ladders to reduce the risk of falls (Figure 7). Another area of hazard was hazard of head high projections. In the milking parlor, employees observed the head high projections which contained paper towels (Figure 8). The employees showed that they must duck under these projections to avoid striking their head. I raised these projections approximately six inches to eliminate this risk.



Figure 6. Anti- skid tape placed on barn steps to prevent slips.



Figure 7. Anti skid tape placed on ladders to prevent slips.



Figure 8. Head high projections that were eliminated.

Safety Checklist Results

Table 1. First aid/ emergency checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
First Aid/Emergency							
1	Are emergency phone numbers listed and posted?		NO	Create and post necessary emergency contacts	2/20	2/12	BK
2	Is there a first aid kit available in the milkhouse?		NO	Purchase first aid kit	2/20	2/12	BK
3	Is someone on the farm trained in first aid?	Y					
4	Are records of incidents, injury and illness maintained on the farm?	Y					
5	Are there adequate fire extinguishers where necessary?		NO	Purchase extinguishers and place where necessary	2/20	2/18	BK
6	Is an emergency eye wash/shower available?	Y					

After completing the first aid/emergency checklist performed at Koot dairy, many correctible actions have been identified. Emergency phone numbers were not listed and posted so emergency phone contacts were created that employees may use to easily reach the necessary source in case of emergency (Figure 9). A first aid kit was not observed in the milkhouse so a first aid kit as well as a sign in the milkhouse was placed for easy and quick identification in case of an emergency (Figure 10). The manager of the farm is trained in first aid so no action was necessary. Records of incidents, injury, and illness are

all maintained and saved onto computer files for recording purposes. Fire extinguishers in the milkhouse were quite low on pressure so a fire extinguisher sign and a new extinguisher were placed in the milkhouse (Figure 11). An emergency eye wash and shower are available near the milking parlor in case of an emergency (Figure 12).

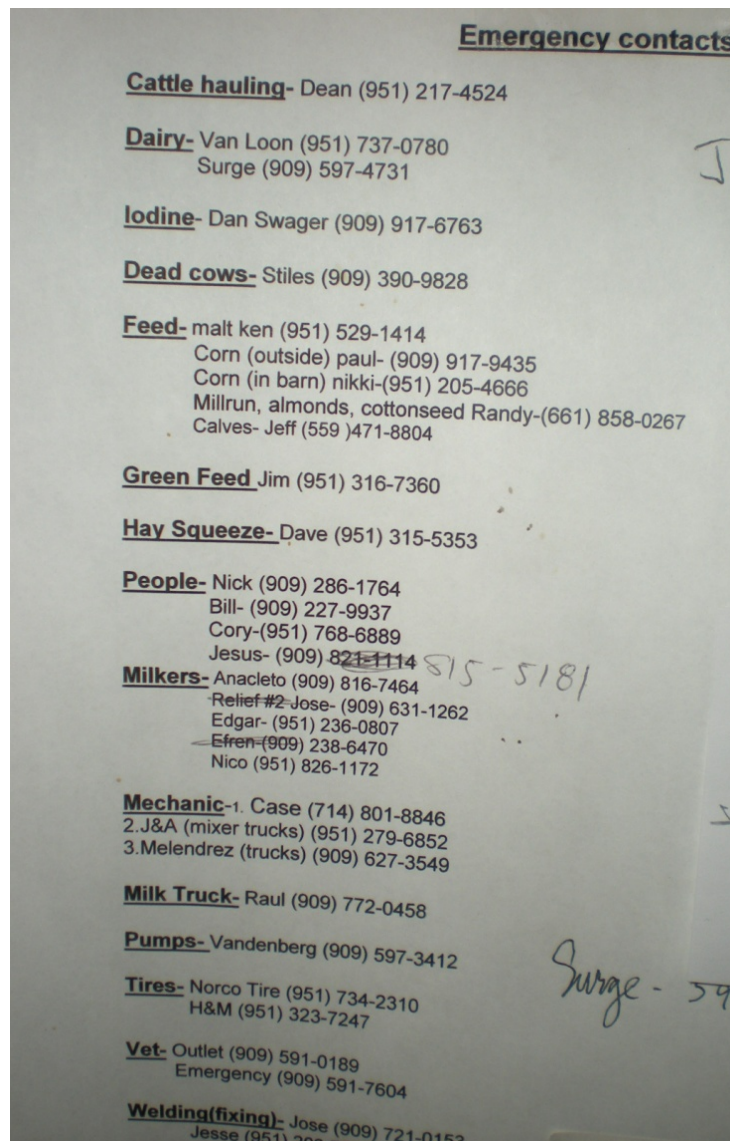


Figure 9. Emergency contact information created for Koot Dairy.



Figure 10. Purchased first aid kit and posted emergency first aid sign.



Figure 11. Purchased extinguisher compliance sign and extinguisher.



Figure 12. Emergency eye shower and eye wash.

Table 2. Power and electrical checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
Power and Electrical							
7	Is power underground or clear of working areas?	Y					
8	Is electrical installation in good condition and protected from possible damage?	Y					
9	Are high voltage warning signs posted where necessary?		NO	Purchase signs and place where needed	2/20	2/18	BK
10	Are overhead wires in the farm yard area and near to field entrances high enough to clear machinery?	Y					

After observation of power and electrical systems on the dairy, the power was observed to be properly underground and the electrical installation was in good condition and protected from possible damage. While a few high voltage signs were posted, one problem observed in the power and electrical checklist appeared to be that more high voltage warning signs were needed to be posted to ensure a more safe work environment (Figure 13). Overhead wires did not present a probable risk as they all appeared to be high enough to clear machinery.



Figure 13. Posted high voltage compliance signs.

Table 3. Farm equipment & machinery checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
Farm Equipment & Machinery							
11	Are tractors fitted with ROPS(rollover protective structures)?	Y					
12	Are extra riders prohibited from riding on farm machinery/tractors?	Y					
13	Are tractors equipped with a reflective rear sign?	Y					
14	Are all tractors equipped with a dry chemical fire extinguisher?		NO	Equip needed tractors with extinguishers	2/20	2/18	BK
15	Does machinery that starts automatically have a caution sign?		NO	Purchase signs and place where necessary	2/20	2/18	
16	Are tractors only ever started from the operator's seat?	Y					
17	Prior to working under raised machinery, is power off, equipment supported and secure?	Y					
18	Are earplugs/earmuffs available to tractor and machine operators?		NO	Purchase and place on needed tractors	2/20	2/12	BK
19	Are routine checks and maintenance completed for all machinery/tractors?	Y					
20	Are the keys to all tractors removed and stored away when not in use?	Y					
21	Is there a standard operating procedure for those operating tractors?		NO	Implement a S.O.P for operating tractors			

After completing the checklist, farm equipment and machinery required multiple correctible actions to accommodate a safer working environment for all. All tractors observed were equipped with rollover protective structures so no action was needed. Extra riders are not permitted to ride on farm tractors unless there are extra seats accommodated for extra riders. If extra riders are observed riding on farm tractors, a warning is given and the proper punishment will be implemented by the manager depending on prior warnings the employee may have received. All tractors are currently equipped with a rear reflective sign (Figure 14). Not all tractors were observed to be equipped with fire extinguishers. Two extinguishers were purchased for tractors that were not currently equipped (Figure 15). Not all automatically starting machinery was equipped with caution signs. Compliance signs were purchased and placed near automatically starting machinery that lacked the necessary warning signs (Figure 16). Earplugs were not available to all tractor and machine operators so they were placed where necessary in order to prevent ear damage resulting from loud machinery (Figure 15). Routine checks and maintenance are completed for all farm machinery on a regular basis as a mechanic does a routine check on all equipment as necessary. There are current policies on Koot Dairy about operating tractors; however the dairy was lacking a standard operating procedure set in place. Therefore, a safety standard operating procedure for anyone operating farm tractors was implemented.

- 1.) Before starting the tractor, observe tractor for any potential problems; low fuel level, low tire pressure, worn out tires, damaged parts, as well as others. If observed fix the problem or contact management immediately.

- 2.) Do not start tractor unless operator is securely in operator's seat with seatbelt attached.
- 3.) No extra riders are allowed on the tractor for any reason.
- 4.) Before working under raised machinery, be sure the tractor is off and secured.
- 5.) When finished, park in its designated area, remove the key, and place key in the key storage container.



Figure 14. Tractors equipped with reflective rear signs.



Figure 15. Tractors given fire extinguishers and ear plugs.



Figure 16. Purchased caution compliance sign on automatically starting grain auger.

Table 4. Farm chemical hazards checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
Farm Chemicals							
22	Are signs posted near all storage areas to warn of the potential hazards?		NO	Purchase and post signs near all storage areas	2/20	2/18	BK
23	Are chemical always stored in their original containers with labels intact?	Y					
24	Is personal protective equipment provided to those working with chemicals?		NO	Purchase and provide necessary equipment	2/20	2/18	BK
25	Are eye wash and shower facilities available in the event of chemical	Y					

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
	splash/exposure?						
26	Are flammables stored away from sources of ignition?	Y					
27	Have employees been trained in safe chemical application?	Y					

Farm chemicals present many risks to employees if they lack the proper training or protective equipment. After the farm chemical checklist on Koot Dairy, a few necessary actions were required to create a safer workplace. Not all signs were posted near all storage areas, so the necessary compliance signs required near all storage areas were purchased and placed (Figure 17).



Figure 17. Purchased and posted compliance signs warning of chemical harm.

Not all of the personal protective equipment required when working with chemicals was available, so the necessary equipment was purchased—gloves, goggles, breathing respirator, and a coverall (Figure 18). An eye wash and shower area is provided in case of an accidental chemical splash or spill while working with chemicals (Figure 12). All employees are trained in proper chemical handling. Before hiring new employees, all are trained for two days and those working with chemicals are taught to be cautious with chemicals and trained about the dangers of mixing chemicals among other risks.



Figure 18. Purchased necessary protective equipment for chemical handling.

Table 5. Fuel tank safety checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
Fuel Tanks							
28	Are fuel tanks located where they will not be struck by vehicles or machinery?	Y					
29	Are dry fire extinguishers available in all fuel storage areas?		NO	Purchase and provide extinguishers where necessary	2/20	2/18	BK
30	Are fuel storage tanks located at least 40 feet from the nearest building?	Y					
31	Are areas around fuel tanks and pumps always kept free of weeds, trash, and other materials?	Y					
32	Are no smoking signs posted in all fuel storage areas?		NO	Purchase signs and place where necessary	2/20	2/18	BK

After observation of the areas of fuel tanks at Koot dairy, there were some correctible actions identified. Fuel tanks were located in proper areas where they will avoid being hit by vehicles but one of the correctible actions identified was providing available extinguishers in fuel storage areas. Fire extinguishers were placed near the fuel storage area (Figure 19). Areas around fuel tanks appeared to be free of trash and other materials so no action was taken. ‘No smoking signs’ were not posted in all fuel storage areas therefore no smoking signs were purchased and placed accordingly (Figure 20).



Figure 19. Purchased fire extinguisher for fuel storage area.



Figure 20. Purchased and posted no smoking signs.

Table 6. Environmental hazards checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
Environment							
33	Is noise exposure controlled and hearing protection available?		NO	Purchase necessary hearing equipment	2/20	2/18	BK
34	Is dust minimized and controlled?		NO	Purchase mask to control dust inhalation	2/20	2/18	BK
35	Is clean drinking water provided?	Y					
36	Is ventilation adequate and heat and cold protection provided?	Y					
37	Are flashlights provided in areas of limited light?	Y					

Completion of the environmental hazard checklist revealed two points requiring corrective action. One problem identified was the lack of hearing protection in areas that may contribute to ear damage. Earplugs were placed in areas of loud noise exposure as well as placing compliance signs warning of ear damage if proper protective equipment is not worn (Figure 21). Another corrective action observed was providing a respirator mask in order to minimize dust inhalation during instances of high dust (Figure 22). No other areas appeared to require attention. Clean drinking water, heat and cold protection, as well as flashlights are all provided for employees in the milk parlor office and used as needed.



Figure 21. Earplugs and compliance sign warning of hearing loss on generator.



Figure 22. Provided respirator mask for employees to reduce dust inhalation.

Table 7. Workplace policies checklist

DAIRY FARM		YES	NO / NA	Recommended action	Target date	Date completed	Person responsible
Workplace policies							
38	Do you have a workcover policy and publically display an "If you are injured" poster?	Y					
39	Do you have policies regarding drugs and alcohol?	Y					
40	Do you have signs posted dealing with public access?		NO	Purchase and place signs where needed	2/20	2/18	BK
41	Is there a standard process for employees to report identified hazards?		NO	Implement a system to report hazards	2/20	2/12	BK
42	Are there designated "no go" areas for children at the dairy?	Y					

Implementing appropriate workplace policies help prevent injuries and lawsuits. The workplace policy checklist found instances of recommended action. Koot dairy displays an "if you are injured" poster that explains the steps in reporting and actions that must be taken thereafter (Figure 23). There is currently a no tolerance policy on drugs and alcohol while working. In order to make this policy clear as possible to all employees, a posted compliance sign in the milkhouse made this policy apparent (Figure 24).

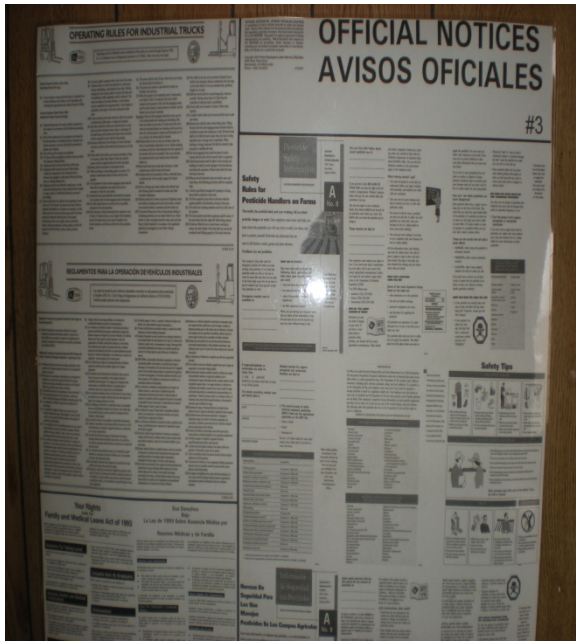


Figure 23 . “If you are injured” poster.



Figure 24. Posted “no drugs or alcohol” sign.

Public access is not allowed on the dairy unless given permission by management. In order to make this policy more clear, a compliance sign was posted near the dairy entrance which stated the land is private property. (Figure 25).



Figure. Posted private property sign near entrance of dairy.

The dairy lacks a standard process for employees to report observed hazards. A standard employee hazard report form was created (Figure 26). This form has been posted in the barn and all employees are encouraged to complete it whenever a potential hazard is discovered. The form is written in English and also contains a Spanish translation as nearly all employees on the dairy are only literate in Spanish.

<u>Employee Safety Hazard Report Form</u> (Informe de Riesgo)	
William Koot Dairy	
Date discovered (Fecha):	_____
Name of employee reporting hazard (Nombre):	_____
Was there an injury? (¿Hubo una lesión?):	_____ YES _____ NO
Location of Hazard? (¿Donde es la ubicación?):	_____

Description of Hazard? (Describe el riesgo.)	_____

Possible Corrections? (¿Correcciones posibles?)	_____

* After completion, submit form to office. (Después de haber concluido informe a la oficina)	

Figure. Employee hazard report form created for Koot Dairy

CONCLUSION

Injury prevention is an essential part in running a business. The potential loss on your farm when an injury occurs can be devastating. Lawsuits and the hidden costs of occupational injury are huge. Creating a workplace with law compliance can prevent many headaches for business owners. With so many potential farm injuries, necessary actions must be taken in order to create a safer working environment.

The study showed that implementing a routine checklist and applying it to the farm on a regular basis would be an important part of a farms business plan. If this study was created again, many different changes would be applied. A longer checklist would be implemented to ensure a more complete safety assessment. Many more compliance signs would be purchased and posted in all required areas.

Injuries are impossible to stop completely so Koot Dairy will continue to assess all of these safety risks daily. The management will continue to work with employees and encourage employees to come to management when a potential hazard is identified. During monthly meetings, the management team will discuss any new hazards introduced or written on the newly created hazard report form. The manager will continue to put safety as a high priority of management and maintain following the standard safety laws placed by the government.

Currently, many dairymen are struggling with tough economic times and creating a safer working environment may protect them from expensive lawsuits as well as many other hardships. Whether managers implement safety protocols or use basic self inspection, these can help thwart injuries and lawsuits brought on by the farm.

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