



Worker pulled into rollers of potato harvester



Two workers were assigned mechanical maintenance tasks on a large, mechanized potato harvester. While the machine was energized, one of the workers became trapped in a component of the equipment that was not guarded. The worker was trapped for more than one hour and sustained serious injuries as a result of the incident.

Purpose of this report

The purpose of this online incident investigation report is to identify the causes and contributing factors of this incident to help prevent similar incidents and to support preventive actions by industry and WorkSafeBC. This online version is not the official WorkSafeBC report. It has been edited to remove personal identifying information and to focus on the main causes and underlying factors contributing to this incident.

Notice of Incident information

Number: 2011144570134

Outcome: Injuries

Core activity: Equipment maintenance on farm

Region: Metropolitan Vancouver, British Columbia

Date of incident: August 2011

Table of Contents

1	Factual Information	3
1.1	Employer.....	3
1.2	Sequence of events.....	4
1.2.1	Work assignment	4
1.2.2	Incident	4
1.2.3	Extrication.....	6
1.3	Potato harvester.....	7
1.3.1	Machine design	7
1.3.2	Safeguards.....	8
1.3.3	Harvesting challenges	9
1.3.4	Manufacturer’s operator’s manual	10
1.4	Seasonal Agricultural Worker Program.....	10
1.5	Supervision	11
1.6	Worker training	11
1.7	Health and safety program	11
2	Analysis.....	11
2.1	Lack of de-energization and lockout procedures	11
2.2	Lack of safeguards	13
2.3	Lack of adequate supervision.....	13
2.3.1	Lack of employer and supervisor training	13
2.3.2	Unsafe work conditions	14
2.4	Lack of worker training	14
2.4.1	Lack of effective instruction	15
2.4.2	Not trained in safe work procedures	15
2.5	Lack of a health and safety program.....	16
2.6	Workers in the Seasonal Agricultural Worker Program.....	16
3	Conclusions.....	17
3.1	Findings as to causes.....	17
3.1.1	Equipment energized during maintenance work.....	17
3.1.2	Missing safeguards	17
3.2	Findings as to underlying factors	17
3.2.1	Lack of supervision.....	17
3.2.2	Lack of worker training	17
3.2.3	Lack of health and safety program.....	17
3.3	Other findings	17
3.3.1	Seasonal Agricultural Worker Program.....	17
3.3.2	Extrication.....	18
4	Orders Issued after the Investigation	18
4.1	Orders to the employer.....	18
5	Health and Safety Action Taken	19
5.1	FARMEDIC Training Program	19
5.2	WorkSafeBC safety alert	19
5.3	Worker and employer education in the Seasonal Agricultural Worker Program	19

1 Factual Information

1.1 Employer

The employer is a vegetable farm in the Metropolitan Vancouver area of British Columbia. The farm also operates a potato washing and packaging plant at the location where the incident occurred in 2011.

The number of employees varies throughout the year, depending on the seasonal activities associated with the farming and potato-packaging operations. During harvesting, which extends for several months, the total number of employees is approximately 25 to 30.

The farm uses seasonal workers for approximately six months of each year. In 2010 and 2011, in addition to local seasonal workers, Mexican nationals were hired under the Seasonal Agricultural Worker Program. This program is an agreement between the governments of Canada and the United Mexican States.

The employer uses large mechanized equipment for vegetable production. This equipment includes harvesters designed to dig, transfer, and sort potatoes. At the time of the incident, three potato harvesters were on site (see Figure 1). All three harvesters were similar models. The harvester is a piece of mobile equipment pulled behind a tractor. It is powered by the tractor through the power take-off (PTO). The harvester involved in the incident has large, hydraulically driven rubber rollers (haulm rollers) that separate the produce from waste materials such as soil, rocks, and potato plant foliage (haulm).



Figure 1: The six-foot stepladder gives a sense of the size of the potato harvester. (This photograph, taken after the incident, does not show the area where the incident occurred.)

1.2 Sequence of events

1.2.1 Work assignment

On the evening before the incident, the farmer and Worker 2 started maintenance work on the potato harvester. While the farmer was providing direction to Worker 2, several safeguards on the harvester were not in place, including the safeguards over the haulm rollers. (This is where Worker 1 was later pulled into the machine by the rollers and become trapped.)

The farmer decided that Worker 1 would work with Worker 2 the next morning. The farmer directed Worker 2 to inform Worker 1 that they would be performing maintenance tasks on the harvester, such as greasing components and changing the bearings of the rollers.

1.2.2 Incident

Worker 1 and Worker 2 started working on the harvester at approximately 06:00. The farmer was working in the fields harvesting, and the supervisor was directing workers in the yard and in the packaging area. Worker 1 and Worker 2 were working independently. The supervisor came by frequently to see if the work was completed.

At approximately 09:30, Worker 1 and Worker 2 finished greasing components and changing most of the bearings needing replacement. The supervisor got into the cab of the tractor and started up the tractor and potato harvester. The supervisor noticed that two of the back rollers were not turning. He directed Worker 2 to grease the bearings and replace the parts that were not functioning properly.

The supervisor turned off the tractor, leaving the key in the ignition. He directed the workers to complete the necessary tasks. The supervisor then left the immediate work area.

The workers changed the parts on the left side of the harvester. Worker 2 got into the cab of the tractor and turned the key that had been left in the ignition. This powered up the harvester through the power take-off. Worker 2 also activated the hydraulics powering the haulm rollers. While the machine was running, Worker 2 then went under the web conveyor (see Figure 2) to see if the rollers were turning.

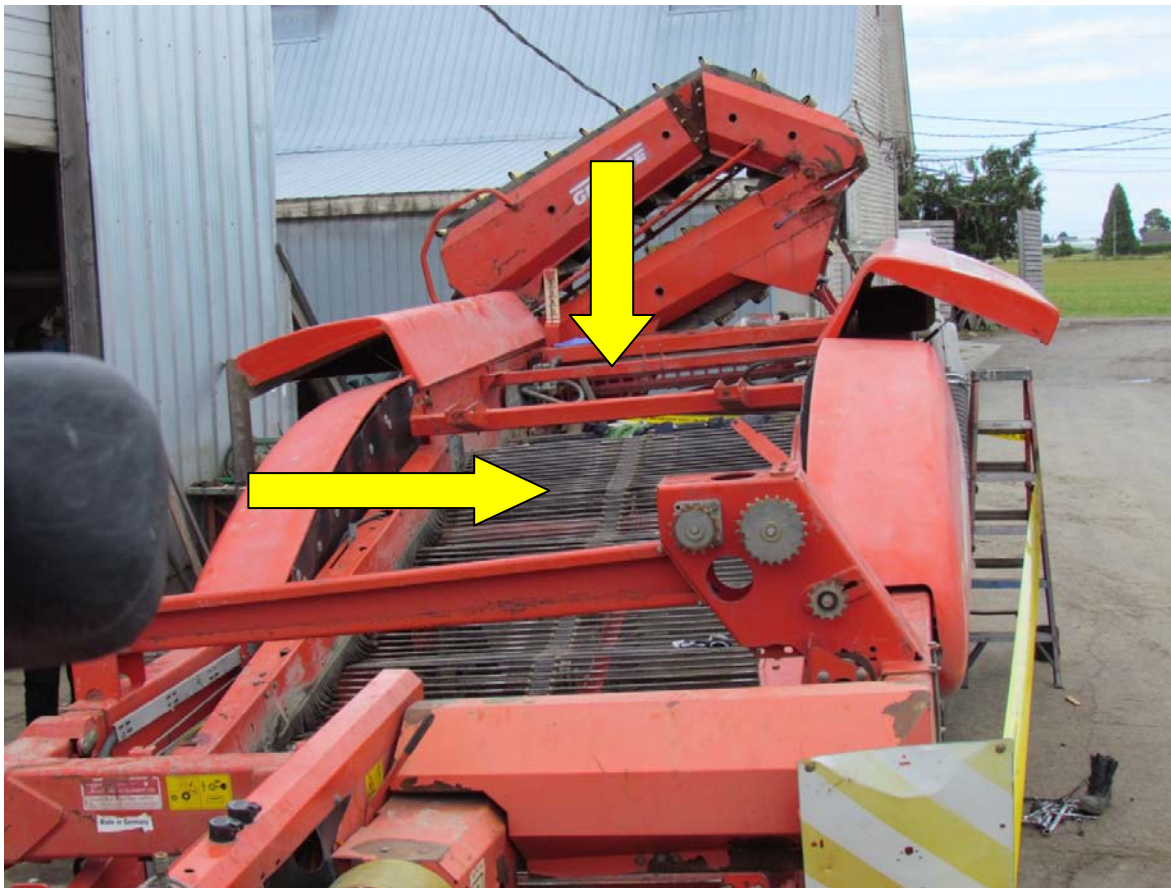


Figure 2: Front view of the potato harvester. The top arrow shows where the haulm rollers are located and the general location where Worker 1 became trapped. The lower arrow shows the web conveyor, which carries the potatoes and other materials along to the haulm rollers for separation.

While Worker 2 was under the harvester, Worker 1 climbed on top of the machine to visually check the rollers. There were no safeguards over the rollers. When he got to the top of the harvester, he slipped and was pulled into the machine by the haulm rollers. Worker 1's leg was pulled into the machine up to his hip. The boot of his other foot was also trapped in the rollers. Figure 3 shows where Worker 1 was trapped.

Worker 2 heard Worker 1 call for help and immediately ran out from under the machine to turn off the tractor. The supervisor returned quickly, and both he and Worker 2 attempted to free Worker 1. The supervisor called 9-1-1 for emergency services.



Figure 3: A view of where Worker 1 was trapped in the haulm rollers. The arrow identifies one of the haulm rollers.

1.2.3 Extrication

Fire and Emergency Services received the 9-1-1 call and was the first emergency service to arrive on the scene. Police, two BC Ambulance Service ground units, and the BC Ambulance Service helicopter unit provided emergency care and assisted in the extrication of Worker 1 from the machine.

Rescue workers took more than an hour to complete the extrication. They were unable to use their cutting tools because the tools regularly carried by fire and rescue services could not cut through the hardened steel of the harvester. Instead, they had to partially dismantle the machine to free Worker 1 (see Figure 4).

Following extrication, Worker 1 was transported to hospital by air ambulance. He had sustained serious injuries requiring surgery.



Figure 4: The arrow shows the haulm roller that pulled Worker 1's leg into the harvester and trapped it. Emergency responders had to drop the roller from its original position to extricate the worker.

1.3 Potato harvester

1.3.1 Machine design

The potato harvester involved in the incident is designed for harvesting potatoes and other root vegetables. The waste material (such as soil, haulm, and stones) is separated from the produce by the haulm rollers before the potatoes are transferred to a separate storage vehicle.

This model of potato harvester is designed to function without workers. No one is expected to be on or near the harvester while it is in operation. The harvester is pulled behind a tractor and is powered through the power take-off and the hydraulics. A second vehicle with storage capacity runs beside the harvester at the same time to transport the produce.

1.3.2 Safeguards

This model of potato harvester is equipped with safeguards over the haulm rollers that are designed to prevent workers from being caught in the moving parts (see Figures 5 and 6). The safeguards are hinged and fixed in place with a spring-loaded locking system that requires a tool, such as a screwdriver, for removal. The manufacturer’s manual states: “Only start the machine up if all protective guards are fitted and in their protective positions!”

The farm has three potato harvesters, two of which had safeguards over the haulm rollers. Although the employer had the safeguards for the harvester involved in the incident, they had never been installed on the machine. The guards had been stored on the farm for at least two years before the incident.



Figure 5: The arrow shows where Worker 1 was trapped in the unguarded haulm rollers.



Figure 6: This photograph shows the safeguards that should have been installed over the haulm rollers. The safeguards are designed to keep workers from being pulled into the machine.

1.3.3 Harvesting challenges

Mechanical potato harvesting requires that the haulm (the foliage portion of the plant) be killed off before harvesting. A farmer may either kill off the potato tops chemically or cut them off before harvesting.

The haulm tends to get caught up in the web conveyor of the potato harvester, creating obstructions. This was one of the challenges of harvesting potatoes. The harvester involved in the incident does not have a built-in, engineered method for dealing with this problem. When the conveyor would become obstructed with haulm, the practice at the farm was to remove it manually.

The functionality of mechanical harvesters varies, depending on the variety of potato, farming practices, weather conditions, soil type, and soil condition. Although mechanical harvesters are designed to accommodate various types of soil, the heavy, wet soil observed at the farm makes separating the soil and the haulm from the potatoes a challenge.

1.3.4 Manufacturer's operator's manual

The potato harvester involved in the incident was manufactured in 1998. The employer had only the operator's manual for a newer model of the harvester. However, the information in the old and new manuals pertaining to health and safety is fundamentally the same. (In this report, the references to the operator's manual are to the manual that was at workplace.)

According to the operator's manual, the potato harvester is a potentially dangerous machine that presents hazards to the health and safety of workers when the manufacturer's instructions are not followed.

The operator's manual clearly states that the potato harvester may only be operated, serviced, and repaired by workers who are familiar with the machine and who have been informed of the possible dangers. The operator's manual also states that the manual must be made available to workers at all times and that workers must read its contents before starting and using the machine.

As mentioned previously, the manual clearly states that workers should only start up the machine if all safeguards are fitted in their protective positions. As well, work on the harvester may only be carried out when the engine is switched off and the key is removed from the ignition.

There are many visual warning symbols in the operator's manual about actions that are potentially hazardous.

1.4 Seasonal Agricultural Worker Program

The governments of Canada and the United Mexican States signed a Memorandum of Understanding to allow the entry of Mexican agricultural workers into Canada. The agreement satisfies the requirements of the Canadian agricultural labour market.

The governments of Canada and the United Mexican States require that each participating employer sign an Agreement for the Employment in Canada of Seasonal Agricultural Workers from Mexico.

The following is an excerpt from section VIII of the agreement:

The EMPLOYER agrees and acknowledges that the WORKERS approved under the Seasonal Agricultural Workers Program are authorized by their work permit only to perform agricultural labour for the EMPLOYER to whom they are assigned. Any person who knowingly induces or aids a foreign worker, without the authorization of HUMAN RESOURCES AND SKILLS DEVELOPMENT CANADA, to perform work for another person or to perform non-agricultural work, is liable on conviction to a penalty up to \$50,000 or two years imprisonment or both. *Immigration and Refugee Protection Act S 124(1)(c) and 125.*

The agreement does not define agricultural or non-agricultural work. Determining whether or not mechanical maintenance of the potato harvester is within the scope of the agreement is not part of this report. WorkSafeBC is mandated to determine compliance with the *Workers Compensation Act* and the Occupational Health and Safety Regulation as it pertains to work that is planned, assigned, and conducted.

1.5 Supervision

The farmer usually determined what tasks would be assigned to each agricultural worker. This information was usually communicated to the workers in the evening by the supervisor. The workers reported that they got direction from either the farmer or the supervisor.

Although the farmer determined the work assignments, it was generally the supervisor who interacted with the Mexican workers hired through the Seasonal Agricultural Worker Program.

At the time of the incident, the supervisor was not formally designated or trained as a supervisor but he directed workers. In addition to supervising workers, the supervisor drove the forklift and delivered produce.

1.6 Worker training

Worker 1 was a new worker to this farm. Neither Worker 1 nor Worker 2 had seen a potato harvester before coming to the farm. Their knowledge and experience related to potato harvesters was obtained at this farm.

The employer did not have records of training for new and young workers. No training or written instruction was provided in Spanish, the language spoken by all of the Mexican workers at the farm.

1.7 Health and safety program

The employer did not have a health and safety program. The type of program that is required depends on the number of workers and on the nature and extent of risks and hazards in the workplace. The employer was required to maintain a formal health and safety program; this is discussed in the Analysis section of this report.

2 Analysis

This analysis discusses the following:

- Lack of de-energization and lockout procedures
- Lack of safeguards
- Inadequate supervision
- Lack of worker training
- Lack of a health and safety program
- Challenges facing workers in the Seasonal Agricultural Worker Program

2.1 Lack of de-energization and lockout procedures

Workers directed to do maintenance work on the harvester were not trained in de-energization or lockout procedures. No written procedures were provided to them or to the supervisor. As a result, the workers were exposed to hazards that they likely did not understand.

Workers, especially those new to a workplace and exposed to new equipment, learn safety rules and concepts partly through experience. Worker 1 reported that before the incident at least two workers had worked above the harvester's haulm rollers to remove potato haulm while the machine was operating.

WorkSafeBC received contradictory statements on whether workers were ever directed to work on the harvester while it was energized. The employer reported that the harvester was shut down whenever workers were required to remove the potato haulm from the web conveyer and that workers were told to get off the harvester before it was restarted. However, several workers, in separate interviews, described events similar to what was reported by Worker 1. Therefore, the WorkSafeBC investigation determined that it is likely that workers had been directed to remove potato haulm while the potato harvester was operating, which is contrary to the manufacturer's instructions and the Occupational Health and Safety Regulation.

With Worker 1's awareness that workers have removed haulm while the harvester was energized, it is likely that he was not aware of the hazards he was exposed to when doing maintenance on the energized machine on the day of the incident.

The maintenance section of the operator's manual includes the following specific instructions for ensuring that a machine cannot be inadvertently started up during maintenance work:

Switch off the machine completely for maintenance and repair work and ensure that it is protected against inadvertent starting by:

- locking the principal controls and removing the ignition key and/or
- attaching a warning sign to the main switch

The Occupational Health and Safety Regulation, [section 16.3\(5\)](#), requires that servicing, maintenance, and repair of mobile equipment must not be done when the equipment is operating, unless continued operation is essential to the process, and a safe means is provided.

In addition, the Occupational Health and Safety Regulation, [section 10.2](#), states, in part, that if the startup of the machine could cause injury, the energy source must be isolated and effectively controlled.

With the potato harvester, turning off the engine would de-energize the machine. Removing the key or disconnecting the power take-off would be an acceptable procedure to ensure that the power cannot be turned on by anyone (an alternative to locking out with locks). When the supervisor left the key in the ignition of the tractor, the workers were able to start the tractor and power the harvester by engaging the power take-off and the hydraulics.

The investigation determined that workers were placed at undue risk of injury while doing maintenance work on the harvester because they lacked training in de-energization and lockout procedures. When the supervisor left the key in the ignition, the harvester was not locked out. Worker 2 was able to turn the key and energize the harvester, resulting in serious injuries to Worker 1. Although Worker 2 was not injured, he was at risk of injury when he went under the web conveyer while the harvester was energized.

2.2 Lack of safeguards

[Section 12.2\(b\)](#) of the Occupational Health and Safety Regulation requires that, unless otherwise specified, machinery and equipment must be fitted with adequate safeguards that ensure that a worker cannot access a hazardous point of operation.

This potato harvester is designed to be operated only if the safeguards are fitted over the haulm rollers. Although the employer had the safeguards on site for at least two years, they had not been installed over the rollers at the time of the incident. No explanation for their absence was given. The other harvesters owned by the employer did have the safeguards installed over the rollers.

On the night before the incident the farmer started maintenance tasks on the harvester with Worker 2, and he had an opportunity to observe that the safeguards were absent. He could have installed the safeguards on the harvester before he told untrained workers to do maintenance on the machine.

The safeguards over the haulm rollers were not the only guards missing from this harvester. After the incident, the supplier conducted an inspection of the harvester and found several safeguards missing.

A few years earlier, a worker had been injured at the same farm when clothing was caught in unguarded machinery in the potato-packaging plant. A WorkSafeBC inspection report issued at that time outlined the employer's responsibility to guard machinery where a worker could access moving parts. WorkSafeBC issued orders to the employer to ensure that machinery was adequately guarded. Therefore, it is reasonable to expect that the employer should have ensured that guards were installed on a piece of equipment where access to the haulm rollers could result in serious or fatal injuries.

The missing safeguards were a cause in this incident. Worker 1 was pulled into an area of the harvester that should have been guarded. This resulted in Worker 1 becoming trapped and sustaining serious injuries.

2.3 Lack of adequate supervision

2.3.1 *Lack of employer and supervisor training*

When interviewed, the workers stated that both the farmer and the supervisor gave them direction. However, neither the farmer nor the supervisor had training in the employer's or the supervisor's health and safety responsibilities as outlined in the *Workers Compensation Act*.

The *Workers Compensation Act*, [section 115\(2\)\(e\)](#), requires that the employer must "provide to the employer's workers the information, instruction, training and supervision necessary to ensure the health and safety of those workers in carrying out their work."

The following excerpt from the *Workers Compensation Act*, [section 117\(1\)](#), outlines the expectations for a supervisor:

Every supervisor must

- (a) ensure the health and safety of all workers under the direct supervision of the supervisor,
- (b) be knowledgeable about this Part [of the Act] and those regulations applicable to the work being supervised . . .

[Section 117\(2\)](#) of the *Workers Compensation Act* requires that a supervisor must ensure that the workers under his or her direct supervision “are made aware of all known or reasonably foreseeable health or safety hazards in the areas where they work.”

The investigation determined that the supervisor had not received training from the employer to enable him to effectively ensure the health and safety of the workers while they were doing maintenance tasks on the harvester.

The operator’s manual clearly states that before beginning maintenance work, a supervisor must be designated and instruction must be provided for the equipment being used. Although the supervisor was not formally designated as the supervisor, he was directing the workers. Neither the farmer nor the supervisor had the knowledge needed to ensure that the workers performed the maintenance work safely.

2.3.2 Unsafe work conditions

At the time of the incident, the farmer was in the fields harvesting and the supervisor was overseeing the work that was being completed on the harvester. The supervisor had checked on the workers frequently throughout the morning and had provided further direction to them approximately 30 to 45 minutes before the incident. At that time, the supervisor had started up the tractor, energizing the harvester by activating the power take-off. After checking the harvester, the supervisor turned off the tractor but left the key in the ignition. The supervisor then told the workers to do more work on the harvester.

The operator’s manual states numerous times in several chapters: “Only carry out work on the machine when the engine is switched OFF! Remove the ignition key!”

The investigation determined that the key was left in the ignition after the supervisor left the area, which provided the untrained workers with access to the power source (the tractor powering the harvester through the power take-off and hydraulics). Leaving the key in the ignition—a cause in this incident—was standard practice on the farm.

2.4 Lack of worker training

Worker 1 had worked on the farm for less than a month before he was seriously injured. He had not previously worked on a potato farm in either Canada or Mexico, and neither Worker 1 nor Worker 2 had ever seen a potato harvester. Any information about this equipment and knowledge of its hazards was limited to what had been relayed by either the farmer or the supervisor.

It was the employer’s responsibility to provide required instruction and training to the workers. Given that the employer was taking part in the Seasonal Agricultural Worker Program, it was the employer’s responsibility to provide the required instruction and training in the language or a manner that the Spanish-speaking workers could understand.

2.4.1 Lack of effective instruction

The employer did not provide training, instruction, or written procedures in Spanish, the language spoken by both Worker 1 and Worker 2. Worker 2 spoke and understood some limited English, and therefore the farmer and the supervisor relied on him to interpret and explain work activities to the other workers.

The safety section of the operator's manual states: "These operating instructions contain basic advice which should be observed during set-up, operation and maintenance. Therefore, these operating instructions must be read by the personnel concerned prior to starting up and using the machine, and be available to personnel at all times."

Even if the operator's manual had been made available to workers asked to perform maintenance tasks, they would not have been able to read the manual because of the language barrier. Therefore, Spanish-speaking workers should not have been directed to work independently on a piece of equipment that posed a significant risk of serious injury or death.

2.4.2 Not trained in safe work procedures

The Occupational Health and Safety Regulation, [section 3.23](#), requires the employer to provide health and safety training and orientation specific to the workplace to all new workers. As well, [section 28.6](#) of the Regulation requires that when agricultural workers, such as seasonal and temporary workers, start employment, the employer and the person supervising the workers must ensure that they are instructed about the safe performance of their duties. This employer did not provide workers with workplace health and safety rules, safe work procedures, or adequate information related to the hazards to which they were exposed.

In addition, the operator's manual states that the harvester should only be operated, serviced, and repaired by workers who are familiar with the machine and have been informed of the possible dangers.

The potato harvester introduced hazards and the risk of serious injury. The workers were not experienced with this machine, they were not provided with safe work procedures, and the machine posed significant risk, so the employer was placing the workers in a hazardous situation. Specific training was needed:

- Workers doing maintenance on the harvester needed training to ensure that the safeguards were in place before starting up the machine. (Workers may have assumed that safeguards over the haulm rollers were not required, since the harvester involved in the incident did not have these guards installed at any time while it was in service.)
- Workers doing maintenance on the harvester needed training in de-energization and lockout procedures. (Worker 1 was not aware of the danger of climbing on the energized harvester to visually check the rollers. Worker 2 did not recognize the danger of being under the web conveyor checking repairs on the rollers while the harvester was energized.)

Lack of familiarity with the potato harvester, lack of training in safe procedures, and previous experience working on the energized harvester to remove haulm may all have contributed to the incident and Worker 1's serious injuries. The same factors also put Worker 2 at risk of serious injury or entanglement.

The workers did not receive the required information from the operator's manual, written procedures, or adequate training in a manner that they could understand. As a result, they did not have the knowledge to ensure their own health and safety when they were left to work on their own.

2.5 Lack of a health and safety program

At the time of the incident, the employer did not have a health and safety program. The Occupational Health and Safety Regulation sets out the type of program required based on the number of employees and the risk of injury at the workplace.

Including seasonal workers and family workers, the farm employs approximately 25 to 30 workers during harvest season, which extends for several months. According to WorkSafeBC's Assigned Hazard Rating List, vegetable farming has a moderate risk of injury.¹ As a result of the hazard rating and the number of workers, this employer is required to maintain a formal health and safety program.

The Occupational Health and Safety Regulation, [section 3.3\(c\)](#), requires that the health and safety program be designed to prevent injuries. It must include appropriate written instructions, which must be made available to all workers as a supplement to the Regulation.

The requirements for a health and safety program also include the need to conduct regular inspections of premises, equipment, and work methods to identify hazardous conditions. Any hazardous conditions must be corrected. If regular inspections had been conducted, with the specific intent of identifying unsafe conditions or work practices, the harvester would not have been put into operation without the safeguards installed.

An effective health and safety program will enable the employer to control the health and safety risks workers may be exposed to, improve health and safety performance, communicate health and safety commitments, and provide a framework for attaining health and safety objectives. The lack of a health and safety program contributed to the incident resulting in serious injury to Worker 1.

2.6 Workers in the Seasonal Agricultural Worker Program

Workers entering Canada as part of the Seasonal Agricultural Worker Program value the opportunity to work in Canada. In addition to the normal challenges experienced by new and young workers, foreign workers entering British Columbia to work seasonally may not have an understanding of their rights or how the WorkSafeBC regulatory system functions.

During an interview shortly after the incident, one worker, through an interpreter, explained that the Mexican workers want to keep their jobs secure. He said that although they are hired to do agricultural work, some workers also agreed to do mechanical work. The interviewed worker said that some Mexican workers do different kinds of work because they want the boss to like them. This worker stated that they need someone to talk to the workers about safety so that the workers know what they are doing and they can figure out for themselves how to do only the work they have been hired for.

¹ The Assigned Hazard Rating List is found in guidelines for Part 3 of the Occupational Health and Safety Regulation: <http://www2.worksafebc.com/Publications/OHSRegulation/GuidelinePart3.asp#SectionNumber:HazardRating>

3 Conclusions

3.1 Findings as to causes

3.1.1 *Equipment energized during maintenance work*

Two untrained workers were doing maintenance work on a potato harvester while it was energized. Worker 1 became trapped in the potato harvester when he accessed a part of the machine with hazardous moving parts. The key had been left in the ignition, allowing Worker 2 to energize the harvester.

3.1.2 *Missing safeguards*

Worker 1 was seriously injured when he was pulled into the unguarded haulm rollers while doing maintenance work on the energized potato harvester. The safeguards over the rollers had not been installed on the equipment.

3.2 Findings as to underlying factors

3.2.1 *Lack of supervision*

Neither the farmer nor the supervisor had training in the employer's or the supervisor's health and safety responsibilities. Neither understood the requirement for supervising workers to ensure that they carried out their work safely, for example, by following written procedures for de-energization and lockout.

3.2.2 *Lack of worker training*

The employer did not provide the workers with the instruction and training they needed to perform their work safely. The employer relied on an untrained worker with limited knowledge of English to interpret and explain work activities to other Spanish-speaking workers. The lack of training in safe work procedures exposed workers, while they were working on or near the harvester, to hazards that they were likely unaware of. This lack of training contributed to the serious injury sustained by Worker 1.

3.2.3 *Lack of health and safety program*

The employer did not have a health and safety program in place. If the required program had been followed, there would have been appropriate safe work procedures as well as inspection of the workplace for hazardous conditions, such as the missing safeguards.

3.3 Other findings

3.3.1 *Seasonal Agricultural Worker Program*

Workers in the Seasonal Agricultural Worker Program may feel obligated to perform work they have not been trained to do when directed to do so by their employer. They may feel that they cannot refuse because the employer has given them the opportunity to make money by working in Canada. They may also be reluctant to refuse this work because their livelihood could be affected if the employer does not ask them to return the following year.

Workers in the Seasonal Agricultural Worker Program may not be aware of their rights or may not receive the training necessary to do the work safely, which, in this case, placed them in a situation where a Mexican worker was seriously injured.

3.3.2 Extrication

Entrapment in farm machinery poses a significant challenge for rescue workers. In this incident, the worker was trapped in the potato harvester for well over an hour while the rescuers developed a plan for extrication. The harvester had to be partially dismantled to free the worker.

Because farm machinery is constructed of hardened steel, the cutting tools routinely available through fire and rescue services do not have sufficient ability to cut the machinery for extrication. Therefore, it is likely that farm equipment will require dismantling of the systems or structures where a worker could be trapped. To do this safely and expeditiously, rescue workers need training to determine what components must be taken apart to free a worker and to ensure that rescuers are not placed at risk of injury.

4 Orders Issued after the Investigation

WorkSafeBC issued orders after the investigation. An order requires an employer to take steps to comply with the *Workers Compensation Act* or Occupational Health and Safety Regulation, to take measures to protect worker health and safety, or to fix a hazardous condition. An order is intended to ensure that unsafe conditions are identified and corrected and that the employer complies with the Act and the Regulation. An employer may ask the Review Division to review an order; the Review Division may confirm, vary, or cancel an order.

In addition to issuing orders, WorkSafeBC may recommend proceeding with an administrative penalty against an employer. Penalties are fines for health and safety violations of the *Workers Compensation Act* and/or the Occupational Health and Safety Regulation. For information on when penalties are considered and how the amount of the penalty is calculated, see the [penalty FAQs](#) on WorkSafeBC.com. [Companies that have been penalized](#) are also listed on the web site.

4.1 Orders to the employer

This section summarizes orders issued after the investigation.

The investigation found that the employer was in contravention of the *Workers Compensation Act*, [section 115\(2\)\(e\)](#), which states that an employer must provide to the employer's workers the information, instruction, training, and supervision necessary to ensure the health and safety of those workers in carrying out their work and to ensure the health and safety of other workers at the workplace.

The employer was also in contravention of the Occupational Health and Safety Regulation, [section 10.2](#), which states that if the unexpected energization or startup of machinery or equipment or the unexpected release of an energy source could cause injury, the energy source must be isolated and effectively controlled.

The employer was ordered to ensure safeguards are fitted as required by [section 12.2\(b\)](#), which states that unless elsewhere provided for in the Occupational Health and Safety Regulation, the employer must ensure that machinery and equipment is fitted with adequate safeguards which ensure that a worker cannot access a hazardous point of operation.

5 Health and Safety Action Taken

In addition to the specific actions below, employers, workers, or others in industry may have taken measures to prevent a recurrence of this type of incident. Employers are expected to comply with any orders issued. WorkSafeBC examines recommendations from incident investigations to see what can be done to prevent similar incidents.

5.1 FARMEDIC Training Program

The BC Farm and Ranch Safety and Health Association (FARSHA) has adopted the FARMEDIC Training Program, which FARSHA will deliver to fire and rescue services that may be required to rescue workers from farm equipment. The program provides training for emergency responders in techniques for extrication from farm machinery should someone become trapped or entangled.

The program is described in a brochure available on FARSHA's website:

http://www.farsha.bc.ca/online_assets/category7_item233.pdf

In June 2012, at the Fire Chiefs' Association of British Columbia's Annual Conference and Fire Service Expo, WorkSafeBC had a booth and made this brochure available.

5.2 WorkSafeBC safety alert

As a result of this incident and others involving potato harvesters, WorkSafeBC issued a safety alert. It is available on WorkSafeBC.com:

<http://www2.worksafebc.com/publications/preliminarysafetyalerts.asp?reportID=36932>

5.3 Worker and employer education in the Seasonal Agricultural Worker Program

The Mexican Consulate, WorkSafeBC, and provincial and federal government stakeholders are working to educate employers and workers participating in the Seasonal Agricultural Worker Program. Through the Mexican Consulate, phase 1 took place in Mexico early in 2012, providing approximately 3,000 prospective agricultural workers with health and safety education. In November 2012, employers took part in phase 2 to review employer responsibilities under federal and provincial legislation.

WorkSafeBC Magazine, January / February 2013, has an article on this program (p. 17):

http://www.worksafebc.com/publications/newsletters/worksafe_magazine/Assets/PDF/wsm_jan_feb_2013.pdf

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