Bunker and Pile Safety – GET Your Wake-up Call TODAY

World Dairy Expo - October 6, 2017 Keith Bolsen¹ and Ruthie Bolsen²

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 www.asi.k-state.edu/people/emeritus-faculty/bolsen/
 ² Director, Keith Bolsen Silage Safety Foundation







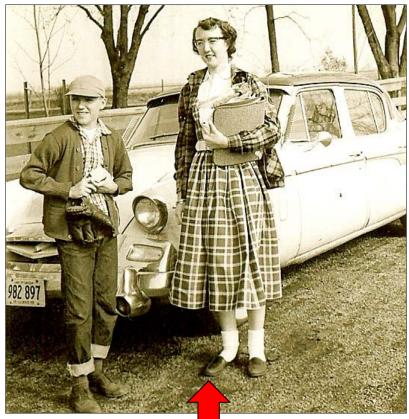


1977 Bement, Illinois





1956 Bement, Illinois



My sister, Dru





They lost a son and brother to a preventable accident.

They lost a son and father to a preventable silage accident.









"Silage-related tragedies have no age boundary, no state boundary, and no country boundary; as family members, employees, and bystanders of all ages have been injured or killed from harvest through feed-out."

"The first step in preventing a serious accident is to make sure everyone on your team is aware of the possible dangers."

Ruthie Bolsen





THINK SAFETY **FIRST**





"We have nothing to lose by practicing safety; but we have everything to lose by not practicing it."

Dennis Murphy, Extension Safety Specialist, The Pennsylvania State University, State College, PA



EIGHT Major Hazards

- **✓** Fatigue
- Complacency
- ✓ Truck or tractor roll-over
- ✔ Run-over by machinery
- Entangled in machinery
- ✓ Fall from height
- Crushed by an avalanche
 - ✓ Silo gas (NO₂)



Hereford Brand – Hereford, TX (October 4, 2014)
Website accessed on Sept. 9, 2017

"Last Friday, 21-year-old Alfonso Miranda was killed when the dumpbed truck he was driving tipped over in a silage pit at Great Plains Feedyard, Hereford, TX. According to Deaf Smith County Sheriff Dale Butler, the investigation concluded the death was an accident."







Hereford Brand – Hereford, TX (October 4, 2014)
Website accessed on Sept. 9, 2017

(cont.) Sheriff Butler said circumstances of the accident are not uncommon. "Those trucks have been known to do that if not operated correctly". Miranda was pronounced deceased at 7:11 pm. He graduated from Hereford High School.





August 6, 2001
In the blink of an eye, 28 tons of silage avalanched on a dairy north of Wendell, ID.
Believe me ...
it was scary!!





It was a huge "wake-up" call for me!





Silage Avalanche Survivors –

Steve, Al, and Richard escaped without serious injuries.



Richard Porter, farmer and rancher, Reading, KS – 1962

Al Kruse, beef cattle nutritionist, Sterling, KS – April 1983

Nick Schreiner, dairyman, Athens, WI – December 1999

Mac Rickels, dairy nutritionist, Comanche, TX – March 2000

Dr. Steve Soderlund, feedlot nutritionist, Parker, CO – July 2008

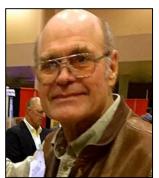
Rich

Αl

Nick

Mac

Steve











Successful Farming (September 2000)

At 3:45 pm on December 3, 1999, about 6 tons of haylage in a bunker silo collapsed on Nick Schreiner of Athens, WI.

Schreiner was rescued in a matter of minutes, but he suffered a C6 spinal cord injury.

Nick is in a wheelchair.



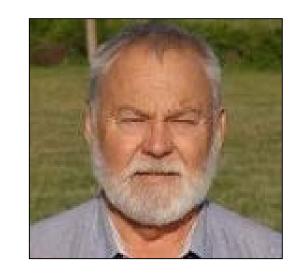




Dairy Herd Management (October 2000)

By Kim Schoonmaker

"Even though I was standing 20 feet from the face, 12 tons of silage collapsed on me. I didn't hear or see anything ... "



"I had been in (silage) pits hundreds of times, and you just become kind of complacent because nothing ever happens ... it just took that one time".

Mac Rickels; dairy nutritionist in Comanche, TX.





Personal communication from Dr. Steve Soderlund, who is a retired DuPont-Pioneer nutritionist in Parker, CO. (July 2008)

"I had a near miss earlier this year. I was taking a core sample at one of our large dairy customers, and I had just moved away from the face when a large section just fell off ... This was a very well packed pile and had immaculate face management."









Personal communication from Al Kruse.

Beef cattle nutritionist, Nutri-Tech, Sterling, KS.

(August 5, 2017)





"In the spring of 1983, I was collecting a sample of highmoisture grain sorghum in a bunker silo at a feedyard in central Kansas. I had performed this task hundreds of times before. As a feedyard employee and I approached the feed-out face, it suddenly collapsed and buried me. Fortunately, the falling grain did not hit the employee. The heel of my boot was exposed, and I was pulled from the silage. I regained consciousness in the ambulance and spent 24 hours in the hospital for observation."

Personal communication from Al Kruse.

Beef cattle nutritionist, Nutri-Tech, Sterling, KS.

(August 5, 2017)





"(cont.) After my near-miss experience, I started taking samples from a loader bucket after it was moved to a safe distance from the face. If no one is available to operate the loader, I simply do not pull a sample!"

"The 'buddy rule' probably saved my life that afternoon."

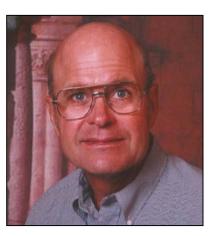
Personal communication from Rich Porter.

Farmer and rancher, Reading, KS.

(February 16, 2017)







I was buried in a trench silo in 1962 when I was 12 years old. One of our employees (Jim Hannigan) was using an Ensiloader to load the feed wagon. He was on one side and I was on the other side to scoop up the silage that fell to the outside of the loading box. Jim had gone to advance the tractor and Ensiloader into the silage when the cave-in occurred. He was not covered. I was next to the face of the silage, and completely buried with about 2 feet of silage. Jim dug me out in less than a minute. If he had not gone to move the tractor forward ... we would have both been killed.

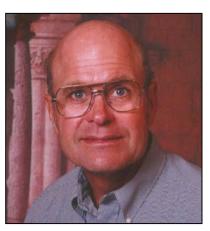
Personal communication from Rich Porter.

Farmer and rancher, Reading, KS.

(February 16, 2017)







(cont.) When I was buried, I immediately knew what had happened. In this "near death" experience, I never saw a light, angels, or my life pass before me, as is sometimes reported in near death experiences. I felt no pain and was in total peace, knowing I would soon be dead. Then in the few seconds between when the rescuer first touched me and when he pulled me out, there was a huge pain in my lungs wanting to breathe, and pain from one of my legs being doubled behind. Other than literally having the crap knocked out of me, I suffered no injury.

Silage Avalanche Fatalities –

In the USA.



Kenneth Hettinger, 63, Schrack Farms, Regersberg PA – February 2009

Andrew Wheeler, 11, MacGlaflin Farm, Claremont, NH – April 2010

Matt Winkelbauer, 53, Four-Quarters Feedlot, Norfolk, NE – October 2013

Jason Leadingham, 34, Pirtle Farms, Roswell, NM – January 2014

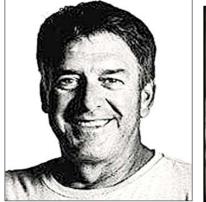
Donald Merchant, 54, Square A Farm, Lebanon, CT – March 2015

Victor Cante Reynoso, 30, Twin View Farm, Platteville, CO – August 2017

Kenneth



Matt



Jason



Victor



Man dies after being trapped in collapsed silage pile south of Johnstown - The Tribune. Greeley, CO (July 14, 2017)

On Friday morning, Victor Cante Reynoso was working on top of a corn silage pile at Twin View Farm, about 6 miles northwest of Platteville. He was removing the tarp and tires that covered the pile, according to the Weld County Sheriff's Office. He climbed down and went to pick up the tires when the silage pile collapsed on top of him.





Man dies after being trapped in collapsed silage pile south of Johnstown - The Tribune. Greeley, CO (July 14, 2017)

(cont.) Sheriff's deputies responded to the emergency call about 9:00 am, and they found Reynoso unconscious. Emergency personnel got his heart beating, but he died later that morning. He is leaving behind a loving and caring family, having been a wonderful husband to Irene and an amazing father to son Victor.





WMUR TV in Claremont, New Hampshire. Web site accessed on August 21, 2010.







Chaves County Sheriff's Office – Man's death an accident - Plains-Valley Online News (January 14, 2014)

At approximately 12:20 p.m. on January 13, 2014, Jason Edward Leadingham was in a bunker silo of corn silage near Dexter, NM when about 15 tons of silage avalanched on him. The bunker silo was owned by Pirtle Farms. Jason's body was not recovered from the massive avalanche until 3 hours later.

It was determined that he died of mechanical asphyxia. There was a sample bag near Jason's left hip.







Child dies after being buried by silage

A 9-year-old boy died on Sunday July 17, 2016, after silage caved in on him in the rural area of Elói Mendes in the state of Minas Gerais, Brazil. Daniel da Silva Andrade was playing in a bunker silo with his 5-year old cousin when the accident happened.

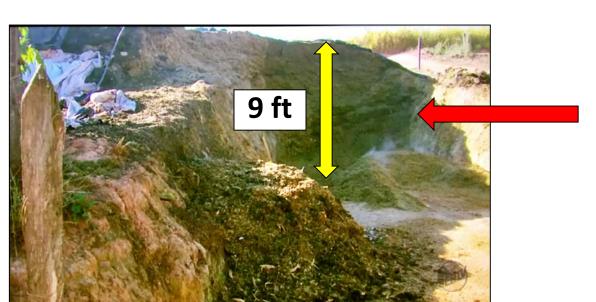






Child dies after being buried by silage

(cont.) The parents said the boy was in the silo with a wheelbarrow, when the feed fell on him and his cousin. Daniel died on the way to the hospital. He suffered a fractured cervical spine. The cousin, a girl, was also hit by the silage but kept her head uncovered. She was hospitalized overnight. (Cited by Sul de Minas, July 18, 2016)







Bottom line ... If a silage program is NOT safe, then nothing else about it really matters in the end.











Hi Keith June 2017

I was asked by a producer to help with his high moisture corn, and we needed to do some lab analysis. And there isn't a soul around the bunker silo.

Two years ago, I would have walked up to the face and taken a sample. One look today, because of you and Ruthie, and I said, "no way".

I pulled the sample with a spear from the top of the bunker and a long way back from the feed-out face.

Thank you for making me think!

Wade Patterson,
Lallemand Animal Nutrition















ACCIDENTS change LIVES and FAMILIES ... FOREVER!

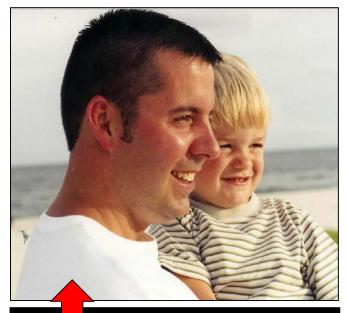
Glen Jantzen, Silage Contractor, Plymouth, NE







Keith Bolsen SILAGE SAFETY FOUNDATION





Date: January 6, 2017 at 2:19 PM CST

To: 'Ruth Bolsen' < ruthbolsen@me.com>

From: Lane Leadingham

Thank you, God! Next Friday, January 13th, will be 3 years since Jason's tragic accident. I remember the phone call like it was yesterday. I suppose I really am "better", but it still crushes my heart and hurts me down to my core ... I still try to make sense of his death and so far, the video is the only positive thing that came out of all of it.

I can never tell you "thank you" enough, and I know you share the pains of my heart Ruthie. We loved our boys so much ... We miss our boys more than words can express.

Hugs to you and Keith! Lane Leadingham Ruidoso, NM



Guidelines that promote safe silage management practices and reduce the risk of a serious accident or fatality from a silage avalanche include:

- Bunker silos and drive-over piles should not be filled higher than the unloading equipment can reach safely. Note: Typically, a loader can reach 12 to 14 ft.
- Never allow people to approach the feed-out face. <u>No exceptions!</u>
- Never stand closer to the feed-out face than three times its height. <u>No exceptions!</u>
- Suffocation is a primary concern and likely cause of death in many silage avalanche accidents, so follow the 'buddy rule' and never work alone in a bunker or pile.
- Never dig the loader bucket into the bottom of the silage. Note:
 Undercutting creates an overhang that can loosen and tumble to the floor.
- If the loader must be driven close to the feed-out face in an over-filled bunker or pile, the 'buddy rule' should be strictly enforced. No exceptions!



Guidelines that promote safe silage management practices and reduce the risk of a serious accident or fatality from a silage avalanche include (cont.):

- When standing on top of the silage in a bunker or pile, never be closer to the edge of the feed-out face than its height.
- Do not "pitch" surface spoilage. It is simply too dangerous to remove spoilage from the top of many bunkers and piles.
- When removing plastic or oxygen-barrier film, tires, tire sidewalls or gravel bags from an over-filled bunker or pile; use caution, wear a safety harness, and be tethered with a heavy rope or cable.
- Never park vehicles or equipment closer to the feed-out face than three times its height. *No exceptions!*
- Take silage samples from a loader bucket at a safe distance from the feedout face.
- If a new crop is packed against an existing silage face, clearly mark where the two silages join. Note: Use caution when the feed-out face approaches the joined area.

Guidelines that promote safe silage management practices and reduce the risk of a serious accident or fatality from a silage avalanche include (cont.):

- Post warning signs around the perimeter of bunkers and piles saying, 'Danger! Silage Face Might Collapse'.
- If a bunker or pile is in a remote area on the farm, the perimeter should be fenced and a sign posted saying, 'Danger: Do Not Enter. Authorized Personnel Only'.

The bottom line in preventing avalanche tragedies includes:

- 1) Avoid excess height when filling bunker silos and building drive-over piles.
- 2) Avoid working or standing close to the feed-out face.
- 3) Avoid becoming complacent! Always pay attention to your surroundings and <u>never think that an avalanche cannot happen to you!</u>





The KEITH BOLSEN SILAGE SAFETY FOUNDATION is a nonprofit corporation dedicated to promoting safe silage management practices for bunker silos and silage piles, as well as providing educational resources and materials for the global silage industry. The goal of the foundation is for everyone involved in a silage program on farms, dairies, feedlots and other livestock operations to return home to his or her family safe everyday.

www.silagesafety.org

Thank You!!

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