



Silage avalanches happen in a blink of an eye and can cause irreparable damage and even death. **INSET:** This silage bunker of haylage was filled higher than any feeding equipment could reach. Typically, an unloader can reach a height of 3.5 to 4 metres. Bunker silos and drive-over piles should not be filled higher than the unloading equipment can reach safely. Photos courtesy of Ruthie and Keith Bolsen.

## Silage bunkers and piles: A life-and-death matter

Ruthie Bolsen and Keith Bolsen for *Progressive Dairyman*

Few farming operations invite as many different opportunities for injury or fatality as a silage program. Silage-related tragedies know no age boundary, as workers and bystanders of all ages have been injured or killed during silage harvest and feedout.

Although silage injury statistics are not easily tabulated, increasingly stories involve bunker silos and drive-over piles.

### Ripped from the headlines

Nearly six tonnes of haylage in a bunker silo collapsed on Nick Schriener of Athens, Wisconsin. Schriener was rescued in a matter of minutes, but he suffered a C6 spinal

cord injury, which classifies him as a quadriplegic.

A nutritionist, Mac Rickels from Comanche, Texas, almost lost his life taking samples from a bunker silo with a 32-foot (9.75-metre) feedout face. "Even though I was standing 20 feet (six metres) from the face, 11 tonnes of silage collapsed on me. I did not see or hear 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."

Sugar Valley Volunteer Fire Company responded to a farm accident in Greene Township after Kenneth R. Hettinger of Rebersburg,

Pennsylvania, became entrapped under almost three tonnes of silage. Farm personnel removed Hettinger from the silage. Sugar Valley Fire Company volunteers attempted to resuscitate Hettinger but were unsuccessful, and he was pronounced dead at the scene.

It started out as a typical day for dairy nutritionist Doug DeGroff of Tulare, California. He pulled up to a client's corn silage pile for a forage sample, bucket and pitchfork in hand. After filling the bucket, he turned to walk back to his pickup to mix and core a sample. "The sun basically went out – I could not see any light, and the feed hit me on my head and covered

me completely," says DeGroff. "I knew what was happening before I hit the ground. The entire face fell on me ... about 18 tonnes broke away."

An 11-year-old New Hampshire boy died from injuries suffered after a feed pile collapsed on top of him at a Claremont farm. Police said it took as long as 20 minutes to find and free Andy Wheeler from the feed pile after the accident. Police said the boy was riding his bike near a silage crib, where livestock feed is stored. "The boy was in a silage crib where there was a 25-foot-high (7.6-metre-high) pile of silage and that

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overhang collapsed,” said Police Chief Alexander Scott.

These news reports represent just a few of the tragic accidents people have suffered from silage avalanches. Although not all of the risk that comes with silage can be eliminated, livestock producers can dramatically reduce the chance that an avalanche will cause serious injury to themselves, family members, employees and visitors.

### Biggest mistakes

The biggest mistake when it comes to bunker silos is filling them too high above the walls. When making drive-over piles, the biggest mistakes are building them too tall and with sides that exceed a one-to-three slope.

It is not uncommon for feedlots and large dairies to have bunkers and piles with feedout faces that are 18 to 25 feet (5.5 to 7.6 metres) tall or taller. Common sense tells us that a silage face that's 20 to 22 feet (six to 6.7 metres) tall is far more dangerous than one that's only 10 to 12 feet (three to 3.7 metres) tall.

### The million-dollar question

Why do we still have these dangerous bunkers and piles? Too often someone is trying to put too much silage into too small a space. Producers will comment that the amount of space available to store

silage has not kept pace with the size of their livestock operation, and they don't have anyplace else to put another bunker or pile.

When producers believe they don't have enough space and can't find or afford the cost of enough space, in most situations that's just not true. The peace of mind in knowing there is a better chance of sending employees home safe and sound every day is priceless. Taking an acre or two out of production to have a safe and efficient silage program also makes good economic sense. Not only will producers gain more tons of silage than those acres can produce, they will also be protecting their employees.

### Do you feel lucky?

That's the question that needs to be asked every time someone is around a silage feedout face. People are relying on luck that the silage won't collapse on them. Silage might not seem that scary or risky, but it is the equivalent of playing Russian roulette.

Witnessing a silage avalanche in person is not something anyone should hope to experience. We witnessed an avalanche about 10 years ago; it happened in the blink of an eye. There was a huge tidal wave of sound and then complete silence; about 27 tonnes of silage had fallen from the feedout face and was covering the concrete floor of the bunker.

Even if the pile looks like it should be safe – it's not. We received the following email from a Ph.D. nutritionist a few years ago: “I had a near miss earlier this year. I was taking core samples at a large dairy customer's pile of corn silage and 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.”

### Decrease the chances of an accident

Here are several guidelines that can decrease the chances of having a serious accident caused by a silage avalanche:

- ◆ Bunker silos and drive-over piles should not be filled higher than the unloading equipment can reach safely. Typically, an unloader can reach a height of 12 to 14 feet (3.7 to 4.3 metres).
- ◆ Use proper unloading techniques, which include shaving silage down the feedout face.
- ◆ Never dig the bucket into the bottom of the silage. Undercutting creates an overhang that can loosen and cause it to tumble to the floor. This is a situation that is quite common when the unloader bucket cannot reach the top of an overfilled


bunker or pile.



- ◆ Never park vehicles or equipment near the feedout face.
- ◆ When sampling silage, take samples from a front-end loader bucket after it is moved to a safe distance from the feedout face.
- ◆ Never allow people to approach the feedout face. No exceptions. A rule-of-thumb is never stand closer to the silage face than three times its height.
- ◆ Follow the “buddy rule” and never work in or near a bunker or pile alone.
- ◆ Avalanches cannot be predicted, so play it safe and stay away from the feedout face.

By putting safety as the highest priority and using common-sense management practices, we can greatly reduce the danger associated with silage avalanches in bunkers and piles. Remember, at the end of the day, it's not about silage shrink loss, feed conversion, cost of gain or milk over feed cost – it's about safely sending all employees home to their families. **PD**

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