**Today’s Maintenance Tip: Hydraulic Lifting**

**Presented as a Public Service for the purposes of Farm Safety**

**LET’S TALK SILOS - SILO SENSE - COMMON SENSE**

**For many years, tower silos have stood – like soldiers standing at attention – protecting farmers valuable feed crop – protecting it from not only spoilage but against contamination and other negative outside sources. Tower Silos have performed so well and for so long that often little attention is given to their value and importance on the farm, or to their maintenance.**

It’s a 24’x80’ stave silo. It had 65’ of haylage in it after filling which settled to 57’ and was capped. It was uncovered and refilled with early corn silage. It took 65 loads to fill. When it settled, there was still room for a dozen loads of late haylage. The farmer wondered if his silo had a basement.

In early spring, the corn silage was gone and the farmer started feeding haylage at about 40’. The only way to get the unloader to start in the morning was to raise it 15 turns on the hoist.

As the haylage was emptied, he noticed that the staves were lifting up; in some places as much as ½” at the horizontal joints. Some staves cracked where the silo lifted. After he fed past that point, the staves came down tight again. The call came that spring; “What’s going on? Is this a silo or a yo-yo, the way it’s going up and down?”

The term we use is hydric lifting. Like a sponge, the feed in the bottom of the silo was compacted to its absolute maximum density. During the winter, it froze and was static. When spring came, the weight of the feed above it was gone. The compacted haylage rebounded or expanded, just like a sponge does. The adhesion of the feed to the silo wall and the tremendous rebounding pressure of the compacted feed pulled the silo apart. As soon as the feed was removed, the weight of the silo brought it back tight again.

So, what was the fix? The cracked staves were replaced. The silo hoops were re-tightened and the inside wall was reinforced with gunite. The silo has performed well since. Does this happen? Absolutely! Does it happen often? No, and in a lot of cases, it goes unnoticed. What can be done to prevent this? First, it’s not a good practice to fill a silo that is already over half full with higher moisture or heavier feeds, especially when there is haylage on the bottom. Next, make sure your silo hoops are tight. Over the years, they are stretched at filling; they relax after the feed settles. This stressing and relaxing does affect their tensioning. Finally, make sure the staves in your silo are in good shape. If not, reline the silo.

Over the last two decades, hundreds of 100’ or higher silos have been built. Design considerations in these big silos include vertical reinforcing. Hydric lifting has not been an issue in any of these huge tower silos.

**Your tower silo is protecting your valuable feed. It needs to be in top notch condition to do its job. You can’t expect it to do its job if it’s not filled properly. For best performance, follow the filling instructions recommended by your silo guy, or follow the filling guidelines presented in your silo operator’s manual. Yes; there is a “Silo Operator’s Manual”! If you don’t have one, contact your local silo company or contact the International Silo Association to send you one.**

Disclaimer

These articles are contributed by Bruce Johnson of Wisconsin Silos. They are meant to be informative and fun to read. They are not all inclusive. Your best source of information is the International Silo Association Operator’s manual or call the International Silo Association at 610-607-3622.