

April 19, 2019

FARM SAFETY WITH PROPANE TANKS

I really admired and respected Rollin (Rolly) Schneider and his career years ago as Nebraska Extension's farm safety specialist. Older farmers will remember the tractor safety days held at Mead, farm safety demonstrations across the state, those pictures that made a few people faint and EMT trainings. What reminded me of Rolly this week was the lines of tanks of anhydrous ammonia waiting to be filled. Anhydrous is our cheapest source of nitrogen for raising corn and is used in making other nitrogen sources. I rediscovered a three page letter he wrote to me 13 years ago that is priceless. The following is Rolly's letter:

Randy, per our conversation on anhydrous (NH₃), I got to thinking back on a couple of cases. I had a farmer from McCook call one day. He said, "There are dead rats all over my yard!" Why? I pondered for a minute and asked, are you drying grain? The answer was yes. Are you using propane? Yes. Do you use the same tank to put on anhydrous? Yes. Did you purge the tank of anhydrous before filling with propane? No.

I pointed out that he had the components for HCN (cyanide gas) or NH and CH. Propane burns at 2 to 15% concentration and can be ignited by a spark. Anhydrous burns at 16 to 25% concentration but has to have a temperature at 1200 degrees F. Anhydrous is made from natural gas and nitrogen and a flame retardant from the air is added. This is why we don't worry a lot about anhydrous exploding unless conditions are right. (Rolly then writes about ammonium nitrate and the Oklahoma bombing mixture which I will not elaborate on).

Back to propane. Propane valves are bronze (zinc, tin and copper). Valves on anhydrous tanks are cast iron which conceivably could cause a spark which would not be good for propane, thus the non-ferrous bronze valves. Anhydrous will eat zinc out of the bronze within 24 hours. Somewhere near your locale 15-20 years ago (I don't remember this), a supplier put anhydrous into a propane tank and they had to evacuate people. I was called and luckily it was a windy day so there were no air inversions. Sometimes in these conditions the fire marshal will suggest a controlled burn to get rid of the problem. This could have been Tobias, Milligan or DeWitt to my memory. Overall, it was handled properly.

(Concerning drug abuse and making meth with anhydrous). The junkie on the interstate had his brain fried so he wouldn't have suspected anything. You might tell your patrolman friends to also forewarn fellow enforcement officers.

Back to McCook, my caller said his neighbor had approximately 20 young hogs die in a pen close to a bin of grain that was being dried. This has to be ideal conditions such as an air inversion for this to happen but it can.

During my tenure, there was a case by Holdrege where a semi overturned and propane spilled down a low area. It did ignite but the mixture was thin enough that it did not cause a problem. Similar to auto racers hopping around because they are on fire. It's a light blue flame or lean mixture instead of an orange flame which is a rich mixture.



Thanks for your comments, my brain is still sharp but I have to exercise it once in a while. I will be writing to Paul Hay to pep him up. Good seeing you. I remember your Grandpa Ellis Pryor in Auburn. He and Albert Ebers had a lot in common. Signed Rollin D. Schneider, Davey, Nebraska, January 5, 2005.

What a great guy to write me this handwritten letter when he was retired. Think about this too with farm safety. Every day, about 100 agricultural workers in the U.S. suffer a lost work time injury. In 2014, an estimated 12,000 youth were injured on farms; 4,000 of these injuries were due to farm work.

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