

**Case 252. 26-year-old farm hand was leveling corn inside of a 4,000-5,000 bushel concrete stave silo when he was found by his employer gasping for breath**

A 26-year-old male farm hand was leveling corn inside of a 4,000-5,000 bushel concrete stave silo when he was found gasping for breath by a farm family member. Corn had been placed in the 80-foot tall by 20-foot diameter silo the day before the incident. The corn loading system used air to push the corn up to the top of the silo then a mechanical unloader augured the corn into the discharge chute. The silo was approximately 75% full; the corn was located approximately 20 feet down from the top of the silo. The decedent entered the silo through the 27" by 24" hatch opening. The decedent had been working in the silo for approximately 10 minutes when he was found by the family member. The family member called another family member and together, they were able to lift the decedent from inside of the silo and carry him to the ground. Emergency response was called. The responding fire department checked the air inside of the silo on the incident date using a multi-gas direct-reading instrument typically used in confined space entry operations. The readings were purportedly within the acceptable ranges of the instrument.

MIOSHA was not notified of the silo incident until four days had elapsed. The top hatches on the silo the deceased entered were in the open position. A MIOSHA General Industry Safety and Health Division representative collected screening samples during the initial site visit and found the following:

- Exterior air temperature: 56.2<sup>0</sup>F
- Silo air temperature: 73.5<sup>0</sup>F
- At approximately three meters below the open hatch;
  - 20.8% oxygen
  - 1.5-3.0 ppm carbon monoxide
  - 885-950 ppm carbon dioxide
  - Non-detectable levels of nitrogen dioxide, sulfur dioxide and hydrogen sulfide.

Initial and subsequent physical examinations and toxicological testing found no indication that the deceased had an allergic reaction to dust or biological materials from inside of the silo. The Medical Examiner indicated his cause of death as pneumonia.

MIOSHA General Industry Safety and Health Division did not issue the farm any citations because MIOSHA could not establish an employer-employee relationship.