

Agricultural Dust Explosions in 2014*

There were seven dust explosions reported in the U.S. in 2014 according to Kingsly Ambrose, Assistant Professor, Kansas State University. This compares to 7 in 2013 and a ten-year average of 10.0 explosions.

There were 0 fatalities and 14 injured.

The explosions were in 5 grain elevators, 1 feed plant, and one pet food plant.

The **probable ignition source** was identified in 2 as caused from sparks from welding, 2 sparks from equipment, and 3 were unknown.

Fuel sources were identified as 3 from corn dust, 2 from feed, and 2 unknown.

Dust explosions occurred in five different states: 3 in Ohio, and 1 each in Oklahoma, Wisconsin, Arizona, and Illinois

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* This report subject to revision as additional information is received.

REPORTED DUST EXPLOSIONS IN U.S. 2013

<u>No</u>	<u>DATE</u>	<u>COMPANY</u>	<u>ADDRESS</u>	<u>FACILITY</u>	<u>FATALITIES</u>	<u>INJURED</u>
1	2014/9/24	Landmark Services Cooperative	Cottage Grove, WI	Grain Elevator	0	1
2	2014/9/18	Mercer Landmark	Celina, OH	Grain Elevator	0	2
3	2014/1/17	Livestock Nutrition Center	Guthrie, OK	Feed Plant	0	0
4	2014/8/22	Bunge	Cincinnati, OH	Grain Elevator	0	0
5	2014/8/13	Coshocton Gain Company	Coshocton, OH	Grain Elevator	0	7
6	2014/9/14	Nestle Purina	Flagstaff,	Pet food plant	0	4
7	2014/9/10	Western Grain Marketing	Adair, IL	Grain Elevator	0	0

TABLE 1. U.S. AGRICULTURAL DUST EXPLOSION STATISTICS

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	<u>TEN YEAR TOTAL</u>
Number	13	9	7	19	8	11	9	10	7	7	100
Fatalities	2	0	0	0	0	0	6	0	1	0	9
Injured	11	8	6	9	12	17	4	8	7	14	96
Type of Facility											
Grain Elevator	7	5	5	14	4	7	5	8	3	5	63
Feed Mill	5	2	1	3	2	2	2	1	2	1	21
Flour Mill	1*	0	0	0	0	0	1	0	1	0	3
Other:											
Corn Milling, Dry	0	0	0	0	0	0	0	0	0	0	0
Corn Milling, Wet	0	0	0	0	0	1	0	0	0	0	1
Rice Mill	0	0	0	0	0	0	0	0	0	0	0
Other	0	2	1	2	2	1	1	1	1	1	0

*Explosion occurred in separate bulk flour storage facility.

Source: Dr. Kingsly Ambrose, Kansas State University

TABLE 2. AGRICULTURAL DUST EXPLOSIONS BY COMMODITY HANDLED AT TIME OF EXPLOSION 2005-2014

<u>COMMODITY</u>	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	<u>TEN YEAR TOTAL</u>
Corn	7	5	4	14	4	8	3	6	5	3	59
Soybeans	0	0	0	0	0	0	0	3	0	0	3
Wheat	2	0	0	0	0	0	0	0	1	0	3
Barley (malted)	0	0	1	0	0	0	0	0	0	0	1
Oats	0	0	0	0	0	0	0	0	0	0	0
Beet pulp	0	0	0	0	0	0	0	0	0	0	0
Corn starch	0	0	0	0	0	0	0	0	0	0	0
Sugar	0	0	0	0	0	0	0	0	0	0	0
Mixed feed	1	2	1	5	2	3	2	1	0	2	19
Rice (Bran)(Flour)(Hulls)	0	0	0	0	0	0	0	0	0	0	0
Wheat Flour	1	0	0	0	1	0	1	0	0	0	3
Wheat (Starch)(Gluten)	0	1	0	0	0	0	0	0	0	0	1
Other	2	1	1	0	1	0	3	0	1	2	11
TOTAL EXPLOSIONS	13	9	7	19	8	11	9	10	7	7	100

Source: Dr. Kingsly Ambrose, Kansas State University

TABLE 3. U. S. AGRICULTURAL DUST EXPLOSIONS LEADING STATES - 1958 to Date

<u>STATE</u>	1958-2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10-YEAR TOTAL	1958-2014
Iowa	78	1	1	1	4	3	1	1	0	0	0	12	90
Kansas	80	0	1	1	0	0	0	1	1	1	0	5	85
Illinois	68	0	0	1	3	2	4	0	1	0	1	12	80
Nebraska	72	0	0	0	1	1	0	2	0	2	0	6	78
Minnesota	50	3	1	0	4	1	0	0	2	0	0	11	61
Texas	44	0	0	1	1	0	0	0	0	0	0	2	46
Ohio	32	1	0	0	1	0	1	0	0	0	0	3	35
Missouri	28	0	1	1	1	0	0	0	1	0	3	7	35
Indiana	26	0	0	1	0	0	0	0	0	1	0	2	28
Louisiana	17	0	0	0	1	0	0	0	0	0	0	1	18
South Dakota	12	0	0	0	1	0	1	0	1	1	0	4	16
Washington	7	0	0	0	0	0	0	0	0	1	0	1	8

Source: Dr. Kingsly Ambrose, Kansas State University