

## **Agricultural Dust Explosions in 2008\***

There were 19 dust explosions reported in the U.S. in 2008 according to Kingsly Ambrose, Assistant Professor, Kansas State University. This compares to 7 in 2007 and a ten-year average of 9.4 explosions.

There were no fatalities and 9 injured.

The explosions were in 14 grain elevators, 4 feed mills, and 1 in a cereal plant.

The **probable ignition source** was identified in 2 cases as sparks, 1 overheated bearing, 1 damaged light, and 15 were unknown.

**Fuel sources** were identified as 14 from corn, 4 were mixed feed, and 1 was unknown.

**Dust explosions** occurred in eleven different states: Iowa (4), Minnesota (4), Illinois (3) and 1 each in Nebraska, Texas, Ohio, Louisiana, Missouri South Dakota, Arizona, and Delaware.

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

REPORTED DUST EXPLOSIONS IN U.S. 2008

<u>NO</u>	<u>DATE</u>	<u>COMPANY</u>	<u>ADDRESS</u>	<u>FACILITY</u>	<u>FATALITIES</u>	<u>INJURED</u>
1	2008/01/31	Dean Cluck Feedyard	Amarillo, TX	Feed Mill	0	0
2	2008/02/12	Endres Processing	Rosemount, MN	By-Products Feed	0	0
3	2008/02/25	DeBruce Grain Inc.	Creston, IA	Grain elevator	0	2
4	2008/03/03	Quaker Oats	Cedar Rapids, IA	Cereal	0	0
5	2008/03/04	Well Pet Food	Monmouth, IL	Elevator (Pet Food)	0	1
6	2008/03/13	River Region Co-op	Sleepy Eye, MN	Grain elevator	0	0
7	2008/04/03	Farmers Co-op	Sanborn, IA	Grain elevator	0	0
8	2008/04/13	Cargill	Forest City, MO	Grain elevator	0	0
9	2008/06/09	Champaign Landmark	Thackery, OH	Grain elevator	0	0
10	2008/06/10	Prairie Central Co-op	Pontiac, IL	Grain elevator	0	0
11	2008/06/19	United Farmers Co-op	Rushmore, MN	Grain elevator	0	0
12	2008/07/09	Midwest Farmers Co-op	Alton, IA	Grain elevator	0	1
13	2008/08/27	West Central Ag Services	Ulen, MN	Grain elevator	0	0
14	2008/10/22	Robert Morgan	Kansas, IL	Feed Mill	0	0
15	2008/10/27	Mountaire Poultry	Frankford, DE	Feed Mill	0	1
16	2008/10/30	ADM	Destrehan, LA	Grain elevator	0	0
17	2008/11/05	Harrold Grain Co.	Harrold, SD	Grain elevator	0	0
18	2008/11/20	All Points Co-op	Gothenberg, NE	Grain elevator	0	1
19	2008/12/30	Arizona Grain	Maricopa, AZ	Grain elevator	0	3

TABLE 1. U.S. AGRICULTURAL DUST EXPLOSION STATISTICS

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	TEN YEAR TOTAL
Number	7	8	9	8	8	6	13	9	7	19	94
Fatalities	0	1	1	1	2	0	2	0	0	0	7
Injured	19	12	7	8	8	4	11	8	5	9	91
Type of Facility											
Grain Elevator	3	2	4	6	4	1	7	5	5	14	51
Feed Mill	4*	1	2	0	2	2*	5	2	1	3	22
Flour Mill	0	0	0	0	1	0	1**	0	0	0	2
Other:											
Corn Milling, Dry	0	0	0	0	0	0	0	0	0	0	0
Corn Milling, Wet	0	0	0	1	0	1*	0	0	0	0	2
Rice Mill	0	0	0	0	0	0	0	0	0	0	0
Other	0	5	3	1	1	2	0	2	1	2	17

\* Explosion occurred in raw grain storage facilities.

\*\*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 1999-2008

<u>COMMODITY</u>	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	<u>TEN YEAR TOTAL</u>
Corn	7	2	5	5	6	3	7	5	4	14	59
Soybeans	0	0	0	1	0	0	0	0	0	0	1
Wheat	0	1	0	0	1	0	2	0	0	0	4
Barley (malted)	0	0	0	0	0	0	0	0	1	0	1
Oats	0	0	1	0	0	0	0	0	0	0	1
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
Mixed feed	0	1	1	0	1	0	1	2	1	5	12
Rice (Bran)(Flour)(Hulls)	0	0	0	0	0	0	0	0	0	0	0
Wheat Flour	0	1	0	0	0	0	1	0	0	0	2
Wheat (Starch)(Gluten)	0	0	1	1	0	1	0	1	0	0	3
Other	0	3	1	1	0	2	2	1	1	0	11
<b>TOTAL EXPLOSIONS</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>6</b>	<b>13</b>	<b>9</b>	<b>7</b>	<b>19</b>	<b>94</b>

Source: Dr. Kingsly Ambrose, Kansas State University

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

<u>STATE</u>	1958-1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	10-YEAR TOTAL	1958-2008
Iowa	71	1	2	0	1	1	2	1	1	1	4	14	85
Illinois	61	1	0	4	1	1	0	0	0	1	3	11	72
Minnesota	45	2	1	0	1	0	1	3	1	0	4	13	58
Kansas	44	1	0	2	2	0	1	0	1	1	0	8	52
Ohio	28	0	0	1	0	2	1	1	0	0	1	6	34
Indiana	23	0	0	1	2	0	0	0	0	1	0	4	27
Nebraska	72	0	0	0	0	0	0	0	0	0	1	1	73
Texas	43	0	1	0	0	0	0	0	0	1	1	3	46
Missouri	28	0	0	0	0	0	0	0	1	1	1	3	31
South Dakota	11	0	0	0	0	1	0	0	0	0	1	2	13
Louisiana	17	0	0	0	0	0	0	0	0	0	1	0	18
Washington	7	0	0	0	0	0	0	0	0	0	0	0	7

Source: Dr. Kingsly Ambrose, Kansas State University