

Agricultural Dust Explosions in 2006*

There were 9 dust explosions reported in the U.S. in 2006 according to Kingsly Ambrose, Assistant Professor, Kansas State University. This compares to 13 in 2005 and a ten-year average of 10.2 explosions.

There were no fatalities and 8 injured.

The explosions were in 5 grain elevators, 2 feed mills, 1cereal plant, and 1 packaging plant.

The **probable ignition source** was identified in 3 cases as fires, 1 electrical spark, and 5 were unknown.

Fuel sources were identified as 6 from corn, 2 were feed, and 1 was unknown.

Dust explosions occurred in eight different states: 2 in Idaho, 1 each in Illinois, Iowa, Minnesota, Kansas, Texas, Utah, and Michigan.

Contact Dr. Kingsly Ambrose by e-mail (kingsly@ksu.edu) or telephone (785-532-4091). Address: 312 Shellenberger Hall, Manhattan, KS 66506

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

REPORTED DUST EXPLOSIONS IN U.S. 2006

<u>NO</u>	<u>DATE</u>	<u>COMPANY</u>	<u>ADDRESS</u>	<u>FACILITY</u>	<u>FATALITIES</u>	<u>INJURED</u>
1	2006/02/23	Livengood Feeds	Lockhart, TX	Feed Mill	0	2
2	2006/02/24	Post Cereal	Battle Creek, MI	Cereal Plant	0	0
3	2006/05/03	General Mills	American Falls, ID	Grain Elevator	0	0
4	2006/07/15	George F. Brocke and Sons	Troy, ID	Grain Elevator	0	0
5	2006/08/27	Wells Foods	Monmouth, IL	Pet Food	0	0
6	2006/09/06	MGP Ingredients	Atchison, KS	Packaging Warehouse	0	0
7	2006/09/19	Cereal Food Processor	Salt Lake City, UT	Grain Elevator	0	0
8	2006/09/22	Heartland Coop	Prairie City, IA	Grain Elevator	0	0
9	2006/10/27	Canby Farmers Grain Co.	Canby, MN	Grain Elevator	0	6

TABLE 1. U.S. AGRICULTURAL DUST EXPLOSION STATISTICS

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	<u>TEN YEAR TOTAL</u>
Number	16	18	7	8	9	8	8	6	13	9	102
Fatalities	1	7	0	1	1	1	2	0	2	0	15
Injured	14	24	19	12	7	8	8	4	11	8	115
Type of Facility											
Grain Elevator	9	11	3	2	4	6	4	1	7	5	52
Feed Mill	2	3	4*	1	2	0	2	2*	5	2	23
Flour Mill	1	0	0	0	0	0	1	0	1**	0	3
Corn Milling, Dry	0	0	0	0	0	0	0	0	0	0	0
Corn Milling, Wet	0	1	0	0	0	1	0	1*	0	0	3
Other	4	3	0	5	3	1	1	2	0	2	21

* 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 1997-2006

<u>COMMODITY</u>	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	<u>TEN YEAR TOTAL</u>
Corn	8	9	7	2	5	5	6	3	7	5	57
Soybeans	2	1	0	0	0	1	0	0	0	0	4
Wheat	3	2	0	1	0	0	1	0	2	0	9
Barley (malting)	0	0	0	0	0	0	0	0	0	0	0
Oats	0	0	0	0	1	0	0	0	0	0	1
Beet pulp	0	0	0	0	0	0	0	0	0	0	0
Corn starch	0	1	0	0	0	0	0	0	0	0	1
Sugar	0	1	0	0	0	0	0	0	0	0	1
Mixed feed	0	0	0	1	1	0	1	0	1	2	6
Rice (Bran)(Flour)(Hulls)	0	0	0	0	0	0	0	0	0	0	0
Wheat Flour	1	1	0	1	0	0	0	0	1	0	4
Wheat (Starch)(Gluten)	0	1	0	0	1	1	0	1	0	1	5
Other	2	2	0	3	1	1	0	2	2	1	14
TOTAL EXPLOSIONS	16	18	7	8	9	8	8	6	13	9	102

Source: Dr. Kingsly Ambrose, Kansas State University

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

<u>STATE</u>	1958-1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	10-YEAR TOTAL	1958-2006
Iowa	67	3	1	1	2	0	1	1	2	1	1	13	80
Kansas	38	0	6	1	0	2	2	0	1	0	1	13	51
Minnesota	43	1	1	2	1	0	1	0	1	3	1	11	54
Illinois	59	1	1	1	0	4	1	1	0	0	1	10	69
Ohio	26	1	1	0	0	1	0	2	1	1	0	7	33
Nebraska	66	5	1	0	0	0	0	0	0	0	0	6	72
Indiana	22	0	1	0	0	1	2	0	0	0	0	4	26
South Dakota	9	1	1	0	0	0	0	1	0	0	0	3	12
Texas	42	0	1	0	1	0	0	0	0	0	1	3	45
Missouri	27	0	1	0	0	0	0	0	0	0	0	2	29
Louisiana	17	0	0	0	0	0	0	0	0	0	0	0	17
Washington	7	0	0	0	0	0	0	0	0	0	0	0	7

Source: Dr. Kingsly Ambrose, Kansas State University