

Agricultural Dust Explosions in 2007*

There were 7 dust explosions reported in the U.S. in 2007 according to Kingsly Ambrose, Assistant Professor, Kansas State University. This compares to 9 in 2006 and a ten-year average of 9.3 explosions.

There were no fatalities and 5 injured.

The explosions were in 5 grain elevators, 1 feed mill, and 1 ethanol plant.

The **probable ignition source** was identified in 1 case as fire, 1 from a collapse, and 5 were unknown.

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

Dust explosions occurred in seven different states: 1 each in Illinois, Iowa, Kansas, Texas, Indiana, Missouri and Wisconsin.

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

REPORTED DUST EXPLOSIONS IN U.S. 2007

<u>NO</u>	<u>DATE</u>	<u>COMPANY</u>	<u>ADDRESS</u>	<u>FACILITY</u>	<u>FATALITIES</u>	<u>INJURED</u>
1	2007/02/01	Dean Clark Feed Yard	Gruver, TX	Grain elevator	0	0
2	2007/02/20	ADM/Growmark	Evansville, IN	Grain elevator	0	0
3	2007/04/13	Cargill	Forest City, MO	Grain elevator	0	1
4	2007/07/04	Cargill	Wichita, KS	Grain elevator	0	0
5	2007/07/24	Baystate Ethanol	Monroe, WI	Ethanol	0	0
6	2007/09/25	International Ingredient Corp	Oelwein, IA	Mixed Feed	0	2
7	2007/10/31	Consolidated Grain Barge	Mound city, IL	Grain elevator	0	3

TABLE 1. U.S. AGRICULTURAL DUST EXPLOSION STATISTICS

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TEN YEAR TOTAL
Number	18	7	8	9	8	8	6	13	9	7	93
Fatalities	7	0	1	1	1	2	0	2	0	0	14
Injured	24	19	12	7	8	8	4	11	8	5	106
Type of Facility											
Grain elevator	11	3	2	4	6	4	1	7	5	5	48
Feed Mill	3	4*	1	2	0	2	2*	5	2	1	22
Flour Mill	0	0	0	0	0	1	0	1**	0	0	2
Corn Milling, Dry	0	0	0	0	0	0	0	0	0	0	0
Corn Milling, Wet	1	0	0	0	1	0	1*	0	0	0	3
Rice Mill	0	0	0	0	0	0	0	0	0	0	0
Other	3	0	5	3	1	1	2	0	2	1	18

* 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 1998-2007

<u>COMMODITY</u>	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	<u>TEN YEAR TOTAL</u>
Corn	9	7	2	5	5	6	3	7	5	4	54
Soybeans	1	0	0	0	1	0	0	0	0	0	2
Wheat	2	0	1	0	0	1	0	2	0	0	6
Barley (malted)	0	0	0	0	0	0	0	0	0	1	1
Oats	0	0	0	1	0	0	0	0	0	0	1
Beet pulp	0	0	0	0	0	0	0	0	0	0	0
Corn starch	1	0	0	0	0	0	0	0	0	0	1
Sugar	1	0	0	0	0	0	0	0	0	0	1
Mixed feed	0	0	1	1	0	1	0	1	2	1	7
Rice (Bran)(Flour)(Hulls)	0	0	0	0	0	0	0	0	0	0	0
Wheat Flour	1	0	1	0	0	0	0	1	0	0	3
Wheat (Starch)(Gluten)	1	0	0	1	1	0	1	0	1	0	5
Other	2	0	3	1	1	0	2	2	1	1	13
TOTAL EXPLOSIONS	18	7	8	9	8	8	6	13	9	7	93

Source: Dr. Kingsly Ambrose, Kansas State University

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

<u>STATE</u>	1958-1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	10-YEAR TOTAL	1958-2007
Kansas	38	6	1	0	2	2	0	1	0	1	1	14	52
Iowa	70	1	1	2	0	1	1	2	1	1	1	11	81
Minnesota	44	1	2	1	0	1	0	1	3	1	0	10	54
Illinois	60	1	1	0	4	1	1	0	0	0	1	9	69
Ohio	27	1	0	0	1	0	2	1	1	0	0	6	33
Indiana	22	1	0	0	1	2	0	0	0	0	1	5	27
Texas	42	1	0	1	0	0	0	0	0	0	1	3	45
Missouri	27	1	0	0	0	0	0	0	0	1	1	3	30
South Dakota	10	1	0	0	0	0	1	0	0	0	0	2	12
Nebraska	71	1	0	0	0	0	0	0	0	0	0	1	72
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