

February 18, 2005

Agricultural Dust Explosions in 2004*

There were six dust explosions reported in the U.S. in 2004 according to Robert W. Schoeff, Professor Emeritus, Kansas State University, and Mavis Rogers, FGIS-USDA. This compares to 7 in 2003 and a ten-year average of 10.1 explosions.

There were no fatalities and only four injured.

The location of the **primary explosion** was identified in 4 of the 6 incidents as the bucket elevator and one each in a sifter and mixer.

The **probable ignition source** was identified in two cases as bearing failure and static electricity, and one case each of metal sparks and fire.

Fuel sources were identified as corn (3) and one each wheat starch, corn gluten, and cellulose.

Dust explosions occurred in five different states: Iowa (2), Kansas, Minnesota, North Carolina, and Ohio.

This report is based on a variety of news sources and the voluntary cooperation of management as we seek to identify that agricultural dust explosions have occurred and what the causes might have been. The data is compiled as a service to the grain storage and processing and allied industries, trade associations, insurance companies, and government agencies.

In the future, we would like to send this information by email where possible. Please send your email address to Anita McDiffett at alm@wheat.ksu.edu to receive future copies of this information.

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

REPORTED DUST EXPLOSIONS IN U.S. - 2004**

<u>NO</u>	<u>DATE</u>	<u>COMPANY</u>	<u>ADDRESS</u>	<u>FACILITY</u>	<u>DAMAGE*</u>	<u>KILLED</u>	<u>INJURED</u>
1	Jan. 12	ADM Corn Processors	Clinton, IA	Corn Processing	Minor	0	0
2	Feb. 24	North Central Co-op	Clarion, IA	Grain Elevator	Severe	0	1
3	April 2	Willmar Poultry Farms	Willmar, MN	Feed Mill	Moderate	0	1
4	April 6	MGP Ingredients	Atchison, KS	Packaging Warehouse	Moderate	0	0
5	April 7	Perdue Farms, Inc.	Cofield, NC	Feed Mill	Moderate	0	1
6	Dec. 3	Iams Co.	Leipsic, OH	Petfood Plant	Severe	0	1
TOTALS:						0	4

*Minor: Less than \$50,000; Moderate: \$50,000-\$500,000; Severe: over \$500,000.
 **Report is subject to revision as new information is received.
 In cooperation with FGIS-USDA, Washington, DC.

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 February 18, 2005

TABLE 1. U.S. AGRICULTURAL DUST EXPLOSION STATISTICS*

	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>TEN YEAR TOTAL</u>
Number	14	13	16	18	7	8	9	8	7	6	106
Dead	1	1	1	7	0	1	1	1	2	0	15
Injured	12	19	14	24	19	12	7	8	8	4	127
Est. Damage to Facility (\$ Mil.)	6.7	29.6	11.4	29.8	4.4	8.2	5.3	5.1	10.1	2.7	11.33
Type of Facility:											
Grain Elevator	4	4	9	11	3	2	4	6	4	1	48
Feed Mill	4	4	2	3	4*	1	2	0	1	2**	23
Flour Mill	0	1	1	0	0	0	0	0	1	0	3
Other:											
Corn Milling, Dry	1	1	0	0	0	0	0	0	0	0	2
Corn Milling, Wet	2	0	0	1	0	0	0	1	0	1**	5
Rice Mill	2	1	0	0	0	0	0	0	0	0	3
Other	1	2	4	3	0	5	3	1	1	2	22

* In 2 cases the explosion occurred in raw grain storage facilities.

**In one case the explosion occurred in a raw grain storage facility.

Source: Robert W. Schoeff, Kansas State University, in cooperation with FGIS-USDA, February 18, 2005.

TABLE 2. AGRICULTURAL DUST EXPLOSIONS
 BY COMMODITY HANDLED AT TIME OF EXPLOSION
 1995-2004

<u>COMMODITY</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>TEN YEAR TOTAL</u>
Corn	3	5	8	9	7	2	5	5	6	3	53
Sorghum	0	0	0	0	0	0	0	0	0	0	0
Soybeans	1	2	2	1	0	0	0	1	0	0	7
Wheat	1	0	3	2	0	1	0	0	1	0	8
Barley (malted)	0	1	0	0	0	0	0	0	0	0	1
Oats	0	0	0	0	0	0	0	0	0	0	0
Beet Pulp	0	1	0	0	0	0	0	0	0	0	1
Corn Starch	2	0	0	1	0	0	0	0	0	0	3
Distillers Feed	1	0	0	0	0	0	0	0	0	0	1
Mixed Feed	2	1	0	0	0	0	1	0	0	0	4
Rice (Bran) (Flour) (Hulls)	3	1	0	0	0	0	0	0	0	0	4
Wheat Flour	0	1	1	1	0	0	0	0	0	0	3
Wheat (Starch) (Gluten)	0	0	0	1	0	0	1	1	0	1	4
Other	1	1	2	3	0	5	2	1	0	2	17
TOTAL EXPLOSIONS	14	13	16	18	7	8	9	8	7	6	106

Source: Robert W. Schoeff, Kansas State University, in cooperation with FGIS-USDA, February 18, 2005.

TABLE 3. U. S. AGRICULTURAL DUST EXPLOSIONS

LEADING STATES - 1958 to Date

<u>STATE</u>	<u>1958-1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>10-YEAR TOTAL</u>
Iowa	62	2	3	3	1	1	2	0	1	1	2	16
Illinois	55	3	1	1	1	1	0	4	1	1	0	13
Kansas	38	0	0	0	6	1	0	2	2	0	1	12
Nebraska	64	1	1	5	1	0	0	0	0	0	0	8
Minnesota	41	0	2	1	1	2	1	0	1	0	1	9
Ohio	25	1	0	1	1	0	0	1	0	2	1	7
Indiana	22	0	0	0	1	0	0	1	2	0	0	4
South Dakota	8	0	1	1	1	0	0	0	0	1	0	4
Texas	41	1	0	0	1	0	1	0	0	0	0	3
Louisiana	17	0	0	0	0	0	0	0	0	0	0	0
Washington	6	1	0	0	0	0	0	0	0	0	0	1
Missouri	27	0	0	0	1	0	0	0	0	0	0	1

Source: Robert W. Schoeff, Kansas State University, in cooperation with FGIS-USDA, February 18, 2005.