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### **Agricultural Dust Explosions in 2001\***

There were nine dust explosions reported in the U.S. in 2001 according to Robert W. Schoeff, Professor Emeritus, Kansas State University, and Mavis Rogers, FGIS-USDA. This compares to 8 in 2000 and a ten-year average of 11.9 explosions.

There was one fatality and seven injured.

The **primary explosion** occurred in the bucket elevator in four cases and in a dryer, mixing area, sifter, grinder, and dust collector.

The **probable ignition source** was fire, sparks, and bearing failures in two incidents each, static electricity, and smoking.

**Fuel sources** were identified as corn (5), wheat starch, oat flour, mixed feed, and powdered milk.

**Dust explosions** occurred in five different states: Illinois (4), Kansas (2), Ohio, Indiana, and Michigan.

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.

Please give credit when using these data in your publications and electronic media.

**If you would like to continue receiving this information, please call or e-mail Anita at 785-532-4080 or [alm@wheat.ksu.edu](mailto:alm@wheat.ksu.edu) and let her know that you would like to continue receiving it. Your name will be removed from the mailing list if she does not hear from you by next year's mailing.**

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

REPORTED DUST EXPLOSIONS IN U.S. - 2001\*\*

<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 31	Midwest Grain Products	Atchison, KS	Packaging Warehouse	Moderate	0	0
2	April 6	Farmers Coop	Greenleaf, KS	Feed Mill	Moderate	1	1
3	April 23	Prospect Farmers Exchange Company	Prospect, OH	Grain Elevator	Moderate	0	2
4	June 26	Evergreen FS Inc.	Yuton, IL	Grain Elevator	Severe	0	0
5	June 27	Consolidated Grain and Barge	Curran, IL	Grain Elevator	Severe	0	0
6	July 11	Ohio Grain Company	Ohio, IL	Grain Elevator	Moderate	0	2
7	Sept. 8	Quaker Oats Company	Danville, IL	Cereal Plant	Moderate	0	0
8	Sept. 21	Dean Foods Inc.	Wayland, MI	Milk Processor	Minor	0	2
9	Dec. 27	Graham Grain Company	Terre Haute, IN	Feed Mill	Moderate	0	0
TOTALS:						1	7

Robert W. Schoeff  
 Kansas State University  
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 January 22, 2002

\*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.

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

	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>TEN YEAR TOTAL</u>
Number	6	13	15	14	13	16	18	7	8	9	119
Dead	1	2	1	1	1	1	7	0	1	1	16
Injured	8	20	14	12	19	14	24	19	12	7	149
Est. Damage to Facility (\$ Mil.)	.4	4.0	7.1	6.7	29.6	11.4	29.8	4.4	8.2	5.3	106.9
Type of Facility:											
Grain Elevator	5	9	7	4	4	9	11	3	2	4	58
Feed Mill	0	0	3	4	4	2	3	4*	1	2	23
Flour Mill	0	1	2	0	1	1	0	0	0	0	5
Other:											
Corn Milling, Dry	0	0	0	1	1	0	0	0	0	0	2
Corn Milling, Wet	0	1	1	2	0	0	1	0	0	0	5
Rice Mill	0	0	0	2	1	0	0	0	0	0	3
Other	1	2	2	1	2	4	3	0	5	3	23

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

\*\*Source: Robert W. Schoeff, Kansas State University, in cooperation with FGIS-USDA, January 22, 2002

TABLE 2. AGRICULTURAL DUST EXPLOSIONS  
BY COMMODITY HANDLED AT TIME OF EXPLOSION  
1992-2001

<u>COMMODITY</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>TEN YEAR TOTAL</u>
Corn	4	9	8	3	5	8	9	7	2	5	60
Sorghum	0	0	1	0	0	0	0	0	0	0	1
Soybeans	0	1	0	1	2	2	1	0	0	0	7
Wheat	1	1	2	1	0	3	2	0	1	0	11
Barley (malted)	0	0	1	0	1	0	0	0	0	0	2
Oats	0	0	1	0	0	0	0	0	0	0	1
Beet Pulp	0	0	0	0	1	0	0	0	0	0	1
Corn Starch	1	2	0	2	0	0	1	0	0	0	6
Distillers Feed	0	0	0	1	0	0	0	0	0	0	1
Mixed Feed	0	0	0	2	1	0	0	0	0	1	4
Rice (Bran)(Flour)(Hulls)	0	0	1	3	1	0	0	0	0	0	5
Wheat Flour	0	0	0	0	1	1	1	0	0	0	3
Wheat (Starch) (Gluten)	0	0	0	0	0	0	1	0	0	1	2
Other	0	0	1	1	1	2	3	0	5	2	15
<b>TOTAL EXPLOSIONS</b>	<b>6</b>	<b>13</b>	<b>15</b>	<b>14</b>	<b>13</b>	<b>16</b>	<b>18</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>119</b>

Source: Robert W. Schoeff, Kansas State University, in cooperation with FGIS-USDA, January 22, 2002.

TABLE 3. U.S. AGRICULTURAL DUST EXPLOSIONS

LEADING STATES - 1958 to Date

<u>STATE</u>	<u>1958-1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>10-YEAR TOTAL</u>
Iowa	55	2	1	4	2	3	3	1	1	2	0	19
Illinois	53	1	0	1	3	1	1	1	1	0	4	13
Kansas	35	0	0	3	0	0	0	6	1	0	2	12
Nebraska	60	0	3	1	1	1	5	1	0	0	0	12
Minnesota	39	0	1	1	0	2	1	1	2	1	0	9
Ohio	23	0	2	0	1	0	1	1	0	0	1	6
Indiana	20	0	1	1	0	0	0	1	0	0	1	4
Texas	40	1	0	0	1	0	0	1	0	1	0	4
South Dakota	7	1	0	0	0	1	1	1	0	0	0	4
Louisiana	15	0	2	0	0	0	0	0	0	0	0	2
Washington	6	0	0	0	1	0	0	0	0	0	0	1
Missouri	27	0	0	0	0	0	0	1	0	0	0	1

Source: Robert W. Schoeff, Kansas State University, in cooperation with FGIS-USDA, January 22, 2002.