Demographics and Non-fatal Injury Patterns of Youth Less Than 20 Years Old on Hispanic Operated Farms in the United States, 2000

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Abstract

Purpose: Minority operated farms are less than three percent of farms in the U.S. and are not adequately captured in surveys of farming. The 2000 Minority Farm Operated Childhood Agricultural Injury Survey (M-CAIS) was designed specifically for the study of racial minority and Hispanic operated farms. This work will examine the demographic and non-fatal injury patterns of youth less than 20 years old on Hispanic operated farms in the U.S. during 2000.

Methods: The data were extracted from the 2000 M-CAIS, conducted by the National Agricultural Statistics Service in collaboration with the National Institute for Occupational and Health. The M-CAIS was a census of all minority operated farms in the U.S. using the 1997 Census of Agriculture as the sampling frame. Data were collected using telephone interviews. A non-fatal farm injury was defined as an occurrence that resulted in at least 4 hours of restricted activity or professional medical treatment.

Results: During 2000, there were an estimated 287,870 ($CI_{95\%}$ ±8,710) youth less than 20 years old present on Hispanic operated farms sometime during the year. By type of farm, 158,881 (55%) of the youth were on livestock operations and 121,654 (42%) on crop operations. Of the total number of youth, only 17,998 (6%) were household youth living on the farms, with the remainder of the youth consisting of 124,801 (43%) relatives visiting the farm, 139,927 (49%) non-relative visitors, and 5,144 (2%) hired workers. There were an estimated 366 ($CI_{95\%}$ ±25) non-fatal injuries to youth less than 20 years old that occurred on Hispanic operated farms during 2000, for an injury rate of 1.3 per 1,000 youth. By type of farm, 234 (64%) of the injuries occurred on livestock operations and 127 (35%) injuries on crop operations. The injury rate for youth on livestock operations was 1.5 per 1,000 youth and 1.0 per 1,000 youth for crop operations. About 71% of all injuries occurred to household youth with an injury rate of 14.4 per 1,000 youth. Hired youth had the second highest injury rate (3.2/1,000 youth), followed by visiting youth relatives (0.5/1,000) and non-relative youth visitors (0.2/1,000). Males accounted for 262 (72%) of the injuries and females for 104 (28%). An examination of injuries by age showed that 131 (36%) of the injuries occurred to youth less than 10 years of age, 136 (37%) to youth 10-15, and 94 (26%) to youth 16-19.

Summary: Youth on Hispanic operated farms are an under-studied segment of the agricultural community in the U.S. The 2000 M-CAIS data will provide previously unavailable statistical estimates for both the demographic characteristics and the non-fatal injury burden of youth less than 20 years old on Hispanic operated farms. These data will help guide safety and health intervention activities for this under-studied segment of the farming community.

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Introduction

The public health surveillance for farmers and agricultural workers in the United States has seen great improvements during the last decade of the twentieth century. These surveillance efforts however, have clustered in areas focusing on fatal traumatic injuries. Non-fatal injury on farms and ranches in the U.S. has not been as successfully documented as the fatal events. Special populations among the agricultural community such as children who live on or visit farms and ranches have seen even fewer surveillance efforts, particularly those aimed at documenting both the demographic distribution of the population at risk and the non-fatal injury outcomes at the national level. This current effort is designed to address demographic distributions and measure the magnitude of injury to youth on Hispanic operated farms across the U.S.

Methods

The data were extracted from the 2000 Minority Childhood Agricultural Injury Survey (M-CAIS), conducted by the National Agricultural Statistics Service (NASS) in collaboration with the National Institute for Occupational and Health (NIOSH). For M-CAIS data collection, we attempted to contact all minority operated farms (including all minority races and those of Hispanic ethnicity) as listed by the 1997 Census of Agriculture sampling frame. We attempted to contact 20,789 Hispanic operated farms, of which 10,862 were interviewed for a crude response rate of 52%. Statistical weights were derived by post-stratifying and benchmarking the data to the 1997 Census of

Agriculture. Data were collected using telephone interviews conducted from eight NASS calling centers during February and March of 2001. A ***farm*** was defined as any operation with $1,000 or more gross agricultural production. A ***non-fatal injury*** was defined as an occurrence that resulted in at least 4 hours of restricted activity or professional medical treatment. ***Youth*** were defined as anyone less than 20 years old and classified as (1) ***household*** if they resided on the farm, (2) ***hired*** if employed directly by the farm operator but excluding those hired by contractors, (3) ***visiting relatives***, and (4) ***visiting non-relatives***. The source that directly produced the injury, and the injury event (or type of incident) were coded in accordance to the Occupational Injury and Illness Classification System (OIICS) [Bureau of Labor Statistics, 1992].

Results

Demographics & Type of Farm Operation

During 2000, there were an estimated 287,870 (Confidence Interval of 95% ($CI_{95\%}$) ±8,710) youth less than 20 years old present on Hispanic operated farms in the U.S. sometime during the year. Of the total number of youth, only 17,998 (6%) were household youth, with the remainder of the youth consisting of relatives visiting the farm (43%; 124,801), non-relative visitors (49%; 139,927), and hired workers (2%; 5,144) (Table 1). An estimated 22,850 or 8% of the total number of youth were reported to have worked on the farm. About 44% (7,921 out of 17,998) of household youth worked compared to 6% (14,928 out of 269,872) of all non-household youth.

An examination of all youth by type of operation shows 45% (158,881) were on crop operations and 55% (121,654) were on livestock (with 3% unknown) (Table 1). Youth on crop operations were primarily seen on fruit, tree nut and berry farms (26%; 31,237 $CI_{95\%}$ ±3,042) or grain and oilseed farms (25%; 30,145 $CI_{95\%}$ ±3,394). Among youth on livestock operations, the majority of youth were on beef operations (72%; 113,888 $CI_{95\%}$ ±5,163), followed by equine (9%; 14,349 $CI_{95\%}$ ±2,144) and dairy (8%; 13,437 $CI_{95\%}$ ±2,033).

The distribution for household youth by type of operation was similar to that for all youth, with 45% (8,109) on crop operations and 50% (9,037) on livestock (with 5% unknown) (Table 1). Of household youth on crop operations, 29% (2,366 $CI_{95\%}$ ±153) were on fruit, tree nut and berry farms and 21% (1,691 $CI_{95\%}$ ±132) on grain and oilseed farms. Nearly three-quarters of those on livestock operations were on beef farms (73%; 6,558 $CI_{95\%}$ ±259), with another 7% (647 $CI_{95\%}$ ±82) on equine farms and 9% (817 $CI_{95\%}$ ±115) on dairy.

Among household youth on crop operations, 40% (3,154) reported to have performed work tasks while 58% (4,590) reported working on livestock operations (Table 1). Among working household youth on crop operations, 26% (814 $CI_{95\%}$ ±86) were on grain and oilseed operations and 24% (750 $CI_{95\%}$ ±78) on fruit, tree nut and berry operations.

In contrast to the distributions for working household youth, there were a larger number of hired youth on crop operations (62%; 3,207) compared to livestock (37%; 1921) (Table 1). Of hired youth on crop operations, the majority were seen on fruit, tree nut and berry operations (39%; 1,263 $CI_{95\%}$ ±310) and grain and oilseed operations (12%; 843 $CI_{95\%}$ ±80). Hired youth on livestock operations were primarily on beef (65%; 1,241 $CI_{95\%}$ ±310) and dairy operations (15%; 296 $CI_{95\%}$ ±61).

Of the estimated 17,998 household youth on Hispanic operated farms, males comprised 51% (9,235) and females 47% (8,400) (with 2% unknown) (Table 2). Youth less than 10 years of age accounted for 33% (6,015) of the household youth, 37% (6,589) for those aged 10-15 years, and 28% (4,969) for those aged 16-19 years (with 2% unknown) (Table 2). Forty-four percent (7,921) of the household youth were reported to have performed work on the farm and 54% (9,717) reported no work (with 2% unknown). Older youth were more likely to have worked on the farm with 61% (3,010) of those aged 16-19 years positive for work, followed by 57% (3,778) for those 10-15 years old and 18% (1,099) for those < 10 years old. Males (52%; 4,843) were more likely to work on the farm than females (37%; 3,076). The higher percent of males working was consistent across all age groups (Table 2).

Non-fatal Injuries

There were an estimated 366 ($CI_{95\%}$ ±45) non-fatal injuries to youth less than 20 years old that occurred on Hispanic operated farms during 2000. The overall injury rate was 1.3 per 1,000 youth. Household youth comprised 259 ($CI_{95\%}$ ±38) or 71% of the

injuries, relatives 58 ($CI_{95\%}$ ±17) injuries, visitors 32 ($CI_{95\%}$ ±13), and hired workers 17 ($CI_{95\%}$ ±10) injuries. Household youth had the highest injury rate, 14.4 ($CI_{95\%}$ ±2.2) per 1,000, followed by 3.3 ($CI_{95\%}$ ±1.9) for hired workers, 0.5 ($CI_{95\%}$ ±0.1) for relatives, and 0.2 ($CI_{95\%}$ ±0.1) for visitors. By type of farm, 64% (234 $CI_{95\%}$ ±36) of the injuries to youth occurred on livestock operations and 35% (127 $CI_{95\%}$ ±27) of the injuries on crop operations. The injury rate for youth on livestock operations was 1.5 ($CI_{95\%}$ ±0.1) per 1,000 and the corresponding rate for crop operations was 1.0 ($CI_{95\%}$ ±0.2). The work-related injury rate on livestock operations was 7.7 ($CI_{95\%}$ ±1.8) per 1,000 compared to 4.0 ($CI_{95\%}$ ±1.5) on crop operations. The non-work injury rate on livestock operations was 0.8 ($CI_{95\%}$ ±0.2) per 1,000 and the rate for crop operations was 0.7 ($CI_{95\%}$ ±0.2).

Males accounted for 72% (262) of the injuries and females for 28% (104) (Table 3). An examination of injuries by age showed that 36% (131) of the injuries occurred to youth less than 10 years of age, 37% (136) to youth 10-15 years, and 26% (94) to youth 16-19 years (with 1% unknown). These percentages by age group were fairly consistent for both males and females (Table 3).

Cuts and lacerations (24%; 86) were the most common type of injury, followed by fractures (19%; 70) and bruises (14%; 51). This distribution was fairly consistent by sex except for fractures, in which 24% (25) of all injuries to females were fractures compared to 17% (44) for males (Table 3). Injuries to the upper extremities (arm, wrist, and hand) comprised 30% (110) of the injuries, followed by 28% (101) to the lower extremities (leg, ankle, and foot) and 24% (88) to the head and face (Table 3).

Falls were the leading type of injury event, accounting for 26% (96) of the incidents (Table 4). About two-thirds (66) of the fall incidents were falls from height. Falls comprised similar percentages for males and females. Contact with objects followed falls, with 44% (41) of these contact-related injuries categorized as struck by an object. Transportation incidents comprised 19% (71) of the injuries, and were primarily non-highway events (68). Non-highway incidents comprised 19% (50) of injuries to males and 17% (17) for females. Bites and other injuries from animals (40) accounted for 19% (20) of all injuries to females compared to 8% (20) for males.

Floors and ground surfaces were the leading source of injury (81 $CI_{95\%}$ ±21), accounting for 22% of the injuries among both males and females. Vehicles including equipment such as tractors and all-terrain vehicles (65 $CI_{95\%}$ ±18) comprised 19% (51 $CI_{95\%}$ ±16) of the injuries to males and 14% (14 $CI_{95\%}$ ±9) of the injuries to females. Animals accounted for a larger percent of injuries to females (27%, 28 $CI_{95\%}$ ±10) than for males (11%, 28 $CI_{95\%}$ ±12).

Non-fatal Injuries to Household Youth

As previously mentioned, household youth comprised 259 ($CI_{95\%}$ ±38) of the 366 injuries, and had the highest non-fatal injury rate (14.4 per 1,000 youth). By type of farm, 63% (162 $CI_{95\%}$ ±30) of the injuries to household youth occurred on livestock operations and 36% (92 $CI_{95\%}$ ±23) on crop operations. The injury rate for household youth on livestock operations was 17.9 ($CI_{95\%}$ ±3.4) per 1,000 and 11.3 ($CI_{95\%}$ ±2.9) for

crop operations. Injuries that occurred to household youth during work comprised 44% (114 $CI_{95\%}$ ±24) of the total, with an injury rate of 14.3 ($CI_{95\%}$ ±3.1) per 1,000. Non-work injuries to household youth comprised 56% (145 $CI_{95\%}$ ±28) of the total with a rate of 8.1 ($CI_{95\%}$ ±1.6) per 1,000. The work-related injury rate on livestock operations was 17.9 ($CI_{95\%}$ ±4.5) per 1,000 compared to 9.2 ($CI_{95\%}$ ±3.9) on crop operations. The non-work injury rate on livestock operations was 8.9 ($CI_{95\%}$ ±2.3) per 1,000 and 7.7 ($CI_{95\%}$ ±2.3) for crops.

Males accounted for 72% (188) of the injuries to household youth (Table 5) and had an injury rate of 20.3 ($CI_{95\%}$ ±3.5) per 1,000 youth. Females comprised the remaining 28% (71) of the injuries with an injury rate of 8.5 ($CI_{95\%}$ ±2.3) per 1,000 youth. The work-related injury rate for males was 17.1 ($CI_{95\%}$ ±4.5) per 1,000 and the work-related rate for females was 10.0 ($CI_{95\%}$ ±3.9). The non-work injury rates were 11.4 ($CI_{95\%}$ ±2.6) per 1,000 for males and 4.9 ($CI_{95\%}$ ±1.6) for females.

Household youth less than 10 years of age comprised 33% (84) of the injuries (Table 5) with an injury rate of 14.0 ($CI_{95\%}$ ±3.6) per 1,000 youth. Youth 10-15 years accounted for 43% (111) of the injuries with an injury rate of 16.9 ($CI_{95\%}$ ±3.7) per 1,000, while those 16-19 years accounted for 23% (60) of the injuries with a rate of 12.2 ($CI_{95\%}$ ±3.4) per 1,000 (with 1% cases unknown for age). Among males the highest rate was seen in those 10-15 years of age with a rate of 24.9 ($CI_{95\%}$ ±6.4) per 1,000, followed by the <10 years (18.6 $CI_{95\%}$ ±5.5) and 16-19 years (16.0 $CI_{95\%}$ ±5.4). The younger age groups among females also had higher rates than the older youth, with a rate of 9.0 ($CI_{95\%}$

±4.0) per 1,000 for those < 10 years and a rate of 8.7 ($CI_{95\%}$ ±3.6) for the 10-15 year olds. Females 16-19 years had an injury rate of 7.6 ($CI_{95\%}$ ±3.8) per 1,000.

The distribution of the nature of injury and body part injured for household youth follows similar patterns to that for all injuries, including a higher percentage of injuries to females being fractures (Table 5). Injuries to the leg were primarily bruises (36%) or cuts (30%), while injuries to the foot and ankle were most often fractures (32%) and cuts (21%). Fractures comprised 68% of the injuries to the arm while cuts (38%) were the leading injury sustained to the hand and fingers. Fifty-five percent of injuries to the back and shoulders were either bruises or sprains/strains, while injuries to the head and face were primarily cuts (48%).

Contact with objects (27%; 71) and falls (25%; 65) were the leading type of injury events (Table 6). Falls from height accounted for 66% (43) of all fall events. Falls comprised similar percentages for males and females. Transportation incidents comprised 21% (54) of the injuries, all of which were non-highway incidents. Bites and other injuries from animals comprised 21% (15) of all injuries to females compared to 4% (8) for males.

Floors and ground surfaces accounted for 19% (50 $CI_{95\%}$ ±16) of the injuries, followed by animals (13%, 35 $CI_{95\%}$ ±12) and off-road vehicles (11%, 28 $CI_{95\%}$ ±12). The off-road vehicles were primarily all-terrain vehicles and tractors. Animals comprised 31% (22 $CI_{95\%}$ ±10) of all injuries to females compared to 6% (13 $CI_{95\%}$ ±8) for males.

Discussion

Results and Previous Research

Minority operated farms are less than three percent of farms in the U.S. and are not adequately captured in surveys of farming. The 2000 M-CAIS was designed specifically for the study of racial minority and Hispanic operated farms. This is the first study to the authors' knowledge documenting demographic and non-fatal injury information to youth on Hispanic operated farms at the national level. It has previously been noted that there is a need to establish more accurate data for persons living and working on U.S. agricultural production operations [Rautiainen and Reynolds, 2002].

Household youth accounted for the largest number of injuries and had the highest injury rate. The injury rate for household youth on Hispanic operated farms of 14.4 per 1,000 youth initially appears to be lower than the rate of 18.7 per 1,000 reported for household youth on an 'all farm' operator survey in the U.S. [Myers and Hendricks, 2001] and household youth in Ontario of 20 per 1,000 [Pickett el al., 1995]. These rates however, were calculated based on data collected using different methodologies and for different time periods. The injury patterns for household youth on Hispanic operated farms were similar to household youth injury on all farms in the U.S., except for the finding of a higher injury rate among females for work-related incidents than for non-work incidents. Myers and Hendricks reported that on all U.S. farms, household female youth had a higher injury rate for non-working incidents [Myers and Hendricks, 2001]. The greater proportion of injuries to females from animals has previously been

documented in a study in Wisconsin [Stueland et al., 1991]. The higher injury rates for livestock operations were also reported in the study of household youth on all farm operations in the U.S. [Myers and Hendricks, 2001].

Limitations

This cross-sectional survey provides a first glimpse of demographic and injury data for youth on Hispanic operated farms. The cross-sectional nature however, does not provide surveillance data for monitoring trends or progress in reducing the injury burden. Conducting the minority operated farm survey on a regular basis would provide the demographic and injury data needed for monitoring changes over time.

The M-CAIS data exclude contractor-hired youth on Hispanic operated farms (compared to youth hired directly by the farm operator who are included in the survey). While the true extent of the undercount of hired youth from this exclusion is unknown, the NASS Farm Labor Survey estimated that 79% of the 1.4 million hired agricultural workers were hired directly by farm operators in July of 2000 [NASS Farm Labor August 2000]. If the distribution of hired youth is similar to all hired agricultural workers, then our estimate for hired youth may be an under-estimate of about 20% if contractor hired youth were not excluded.

The injury rates for hired youth and visitors were much lower than for household youth. Part of this discrepancy can be explained by the calculation of rates, which did not take into account hours of exposure. For example, a youth who spends half a day on a

farm once or twice per year accounts for the same exposure unit as a household youth who works 20 hours per week for the entire year. It is possible that if the unit of exposure were hours-based, the injury rates for hired youth and visitors would be greater than those for household youth. A diary of youth visits and work activities could provide a methodology for obtaining an hours-based unit of exposure for the calculation of rates.

Conclusions

Youth on Hispanic operated farms are an under-studied segment of the agricultural community in the U.S. The 2000 M-CAIS data utilized the NASS 1997 Census of Agriculture list to provide previously unavailable statistical estimates for both the demographic characteristics and the non-fatal injury burden of youth less than 20 years old on Hispanic operated farms. These data will help guide safety and health intervention activities for this under-studied segment of the farming community.

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Table 1.- Total Number of Youth on Hispanic Operated Farms-
Relationship to Farm Operator by Type of Farming Operation, United States 2000

	Total		Crop		Livestock	
	Estimate	CI95%	Estimate	CI95%	Estimate	CI95%
All Youth	287,870	8,710	121,654	6,757	158,881	6,104
Household	17,998	398	8,109	132	9,037	306
Hired	5,144	496	3,207	470	1,921	177
Visitor	264,728	8,607	110,338	6,646	147,922	5,993
Relative	124,801	2,755	49,060	1,892	71,569	2,247
Non-relative	139,927	7,617	61,277	5,933	76,353	4,977
Working Only	22,850	816	9,360	595	13,038	592
Household	7,921	256	3,154	164	4,590	206
Non-household	14,928	751	6,207	548	8,448	527
Hired	5,144	496	3,207	470	1,921	177
Relative	9,784	555	3,000	277	6,526	482

Table 2.- Age and Working Status of Household Youth on Hispanic
Operated Farms by Sex, United States 2000

	Total		Male		Female	
	Estimate	CI95%	Estimate	CI95%	Estimate	CI95%
Total	17,998	398	9,235	252	8,400	239
Age						
<10	6,015	223	3,124	144	2,886	135
10-15	6,589	206	3,349	138	3,236	135
16-19	4,969	168	2,704	120	2,260	110
Work	7,921	256	4,843	178	3,076	146
<10	1,099	88	661	63	439	50
10-15	3,778	157	2,177	111	1,601	98
16-19	3,010	131	1,979	103	1,031	75
Non-work	9,717	290	4,372	172	5,311	189
<10	4,910	197	2,461	126	2,444	122
10-15	2,809	133	1,169	80	1,635	96
16-19	1,944	104	717	62	1,222	80

Table 3.- Injuries to All Youth on Hispanic Operated Farms by Sex, United States 2000

	Total		Male		Female	
	Estimate	CI95%	Estimate	CI95%	Estimate	CI95%
Total	366	45	262	37	104	23
Age						
<10	131	26	92	21	39	14
10-15	136	26	95	22	41	14
16-19	94	21	70	19	24	10
Work Status						
Work	140	27	104	23	36	13
Non-work	226	35	158	28	68	18
Nature of Injury						
Cut, Laceration	86	21	63	18	23	11
Fracture	70	18	44	15	25	11
Bruise	51	16	38	13	13	8
Abrasion	37	14	29	12	8	6
Multiple	35	12.3	22	9.4	13	7.8
Other	87		66		22	
Body Part						
Head	51	16	32	12	19	10
Face	37	14	***		***	
Arm	56	17	38	14	18	9
Hand, Wrist	54	16	39	14	15	8
Leg	58	17	46	15	13	8
Foot, Ankle	43	15	28	11	15	9
Shoulder, Back	25	11	15	9	10	6
Other	42		***		***	

*** Cells did not meet minimum reporting requirements

Table 4.- Injuries to All Youth on Hispanic Operated Farms by Injury Event and Sex, United States 2000

Type of Injury Event (OIICS)	Total		Male		Female	
	Estimate	CI95%	Estimate	CI95%	Estimate	CI95%
Total	366	45	262	37	104	23
Contact with Objects (0)	95	22	72	19	22	10
Struck Against Object (01)	23	11	13	8	10	7
Struck By Object (02)	41	14	34	13	7	6
Caught In Objects (03)	17	9	***		***	
Falls (1)	96	22	68	19	28	12
Fall To Lower Level (11)	66	18	45	15	20	10
Fall On Same Level (13)	26	11	18	9	8	7
Bodily Reaction/Exertion (2)	10	6	10	6	0	
Exposure To Substances/Environments (3)	23	10	15	84	7	6
Transportation Events (4)	71	19	53	16	17	10
Nonhighway Events (42)	68	18	50	15	17	10
Vehicle Struck Stationary Object (422)	11	9	0		11	9
Fall From Moving Vehicle (4231)	23	10	***		***	
Overturn (4233)	15	9	15	9	0	
Loss Of Control (4234)	7	5	***		***	
Assaults And Violent Acts (6)	40	14	20	10	20	10
Assault By Animal (63)	40	14	20	10	20	10
Other/Unknown Events (5 and 9)	32		24		8	

*** Cells did not meet minimum reporting requirements

Table 5.- Injuries to Household Youth on Hispanic Operated Farms by Sex, United States 2000

	Total		Male		Female	
	Estimate	CI95%	Estimate	CI95%	Estimate	CI95%
Total	259	38	188	32	71	19
Age						
<10	84	22	58	17	26	11
10-15	111	24	83	21	28	12
16-19	60	17	43	14	17	9
Work Status						
Work	114	24	83	21	31	12
Non-work	145	28	105	23	41	14
Nature of Injury						
Cut, Laceration	63	18	48	15	15	9
Fracture	49	15	31	12	18	9
Bruise	39	14	31	12	8	7
Abrasion	16	9	***		***	
Multiple	27	11.0	15	7.6	13	7.8
Other	65		***		***	
Body Part						
Head	21	10	12	7	8	7
Face	20	9	20	9	0	
Arm	38	13	27	11	11	7
Hand, Wrist	41	14	29	12	13	8
Leg	43	14	33	13	10	7
Foot, Ankle	38	14	26	11	12	8
Shoulder, Back	23	10	15	9	8	6
Other	35		26		9	

*** Cells did not meet minimum reporting requirements

Table 6.- Injuries to Household Youth on Hispanic Operated Farms by Injury Event and Sex, United States 2000

Type of Injury Event (OIICS)	Total		Male		Female	
	Estimate	CI95%	Estimate	CI95%	Estimate	CI95%
Total	259	38	188	32	71	19
Contact with Objects (0)	71	18	53	16	18	9
Struck Against Object (01)	16	9	***		***	
Struck By Object (02)	30	12	23	10	7	6
Caught In Objects (03)	15	8	***		***	
Falls (1)	65	18	50	16	15	8
Fall To Lower Level (11)	43	14	33	13	10	7
Fall On Same Level (13)	17	9	***		***	
Bodily Reaction/Exertion (2)	10	6	10	6	0	
Exposure To Substances/Environments (3)	12	7	***		***	
Transportation Events (4)	54	17	41	14	13	9
Nonhighway Events (42)	54	17	41	14	13	9
Vehicle Struck Stationary Object (422)	11	9	0		11	9
Fall From Moving Vehicle (4231)	18	9	18	9	0	
Overturn (4233)	11	7	***		***	
Loss Of Control (4234)	7	5	***		***	
Assaults And Violent Acts (6)	23	10	8	6	15	8
Assault By Animal (63)	23	10	8	6	15	8
Other/Unknown Events (5 and 9)	24		19		6	

*** Cells did not meet minimum reporting requirements

Gran, Marsha J.

From: Hard, David L., Ph.D.
Sent: Monday, March 08, 2004 8:23 AM
To: Gran, Marsha J.
Subject: RE: Documents Received

There is only one NIFS organization and the 2003 meeting was held in Windsor, Ontario, Canada. The reason the Columbia, MO address is used is that was where the Administrative Director (used to be the Secretary/Treasurer) worked/lived and this address was used/listed as the correspondence point for NIFS (as Presidents rotate each year and the AD was a more stable address) to get proceedings, publications, official correspondence, etc. Hope this clarifies things for you. Thanks.
DH

-----Original Message-----
From: Gran, Marsha J.
Sent: Friday, March 05, 2004 2:58 PM
To: Hard, David L., Ph.D.
Subject: FW: Documents Received

David,

Per my phone call to you and your call back to me, I am trying to clear up some confusion about the location (where the meeting was held) of the National Institute for Farm Safety 2003 Annual Conference. According to the e-mail Tim Pizatella sent to me (below), the meeting was held in June 22-26 in Columbia, MO; but, according to the NIFS Update the annual conference was held in Windsor, Ontario, Canada, June 22-26, 2003? I got your name as being one of the NIFS Update Editorial Advisory Board members and thought may be you could help clear up this confusion. Are there two NFIS groups that hold separate meetings? Please advise. Thank you for your help. This can wait until you get back into the office.

Marsha Gran, EID
513-533-8350
mjg1@cdc.gov

-----Original Message-----
From: Pizatella, Timothy J.
Sent: Wednesday, January 28, 2004 11:29 AM
To: Gran, Marsha J.
Cc: Fields, Judith K.
Subject: FW: Documents Received

Marsha: These documents were published as Extended Abstracts in the Proceedings of The National Institute for Farm Safety 2003 Annual Meeting, June 22-26, 2003, Columbia, MO. They were included on the DSR CY2003 bibliography and listed as abstracts in the NIFS proceedings. However, I know this is confusing as they look more like journal articles.

Let me know if you need any additional info to enter these properly. Thanks.

TPizatella

-----Original Message-----

From: Fields, Judith K.
Sent: Wednesday, January 28, 2004 11:23 AM
To: Pizatella, Timothy J.
Subject: FW: Documents Received

-----Original Message-----
From: Gran, Marsha J.
Sent: Tuesday, January 27, 2004 4:58 PM
To: Fields, Judith K.
Subject: Documents Received

Judy,

I have received three documents in the mail from your office and I need some clarification about them. The documents are;

1) Demographics and Non-fatal Injury Patterns of Youth Less than 20 Years Old on Hispanic Operated Farms in the United States, 2000, Layne, L. et al.

2) Non-fatal Injuries: An Overview of Injuries to Youth on Racial-Minority Operated Farms in the US, 2000, Goldcamp, M. et al.

3) Farm Hazards to Household Youth on Minority Operated Farms in the United States, 2000: Exposures and Injuries from Work, Horses, ATVs. And Tractors, Hendricks, K. et al.

Were these documents submitted to journals for publication and these are the pre-publication copies or are these reports that were written not to be published? If they are already published, than we would not put these reports in NIOSHTIC-2, we put the published reports in the database. Also, none of the reports have dates on them as to when they were written or that they were approved by anyone? What can you tell me about the documents so I can enter them into NIOSHTIC-2 correctly. Thanks for your help.

Marsha Gran, EID
533-8350

Gran, Marsha J.

From: Bennett, William D. (Bill)
Sent: Wednesday, January 28, 2004 5:34 PM
To: Gran, Marsha J.
Subject: RE: Documents Received

I found out a lot and nothing. See the link below.

http://www.ag.ohio-state.edu/~agsafety/NIFS/nifs.htm

I have not been able to locate the proceedings. I don't know for sure if they were even published. It seems like I have researched this in the past, probably for the 2002 meeting since we have three hits in NIOSHTIC-2 for that meeting. Search for NIFS in all fields, and use them as a model for the 2003 meeting.

You should probably verify the city where the meeting was held. The citations provided by DSR, see the attached file, indicate Clayton, MO., but all of the literature indicates it would be held in Winsor, Ontario, Canada. It may have been moved because of the mad cows coming down with SARS.

CY03DSR.rtf
(29 KB)

-----Original Message-----
From: Gran, Marsha J.
Sent: Wednesday, January 28, 2004 2:18 PM
To: Bennett, William D. (Bill)
Subject: FW: Documents Received

Bill,

FYI - answer about the 3 documents from Judy Fields in DSR. I thought we checked the DSR Bibliography and did not see them listed? What's your call? Thanks.

Marsha

-----Original Message-----
From: Pizatella, Timothy J.
Sent: Wednesday, January 28, 2004 11:29 AM
To: Gran, Marsha J.
Cc: Fields, Judith K.
Subject: FW: Documents Received

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Let me know if you need any additional info to enter these properly. Thanks.

TPizatella

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Sent: Wednesday, January 28, 2004 11:23 AM

To: Pizatella, Timothy J.
Subject: FW: Documents Received

-----Original Message-----
From: Gran, Marsha J.
Sent: Tuesday, January 27, 2004 4:58 PM
To: Fields, Judith K.
Subject: Documents Received

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I have received three documents in the mail from your office and I need some clarification about them. The documents are;

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Marsha Gran, EID
533-8350

NIFS Update

Information from the National Institute for Farm Safety

April 2003 Volume 8 Issue 1

Join us for a 'journey' to Canada

NIFS Annual Conference Facts

Dates: June 22-26, 2003

Location: Windsor, Ontario, Canada

Conference hotel: Hilton Windsor, Ph: 800/445-8667; MUST mention Group Code FSC for special rates

Additional rooms: Radisson Riverfront, Ph: 519/977-9777 or 800/333-3333

Special rates (CANADIAN dollars): $150/night (single or double); $160/night (triple); $170/night (quad); children under 13 FREE

CUTOFF date for special rates: May 15

Conference registration (CANADIAN dollars): NIFS members – $350 before May 15; $425 after May 15. Non-members – $425 before May 15; $500 after May 15

Payment: Registration fees must be paid in Canadian dollars, via Visa or MasterCard or Canadian Money Order

For more information: Michele Brown, Ph: 519/823-5600, E-mail: mbrown@farmsafety.ca

If you've thought about taking a trip to Canada, but weren't quite sure when, this coming June presents a great opportunity! Windsor, Ontario – a city known for its wide variety of attractions, including the arts, entertainment, professional sports and festivals – is the site of the National Institute for Farm Safety, Inc. (NIFS) 2003 Annual Conference.

The dates are June 22-26, and the theme is *Life is a journey, travel safely*. The coordinator of this year's conference, to be held at the Hilton Windsor Hotel, is the Farm Safety Association Inc.

All NIFS members and non-members interested in networking with agricultural safety and health professionals from throughout the United States and Canada are welcome to attend.

Among the highlights of the upcoming conference are:

- a Sunday night opening reception at the Canadian Club Brand Heritage Center, including a tour of Hiram Walker's executive building
- Tuesday afternoon tours of either Rol-land Mushroom Farms and Pelee Island Winery, a traditional European winery; or the winery and Family Tradition Foods, a large processor and marketer of frozen vegetables
- presentations, poster sessions, and educational displays on a wide variety of current agricultural safety and health issues
- another *Both Sides of the Fence* debate (see page 3 for more information)
- a Professional Improvement session presented by Dr. Mary Ann Cooper of the University of Illinois-Chicago on *Electrical Safety on the Farm, Including Lightning*

Still more activities

If you're looking for even more chances to network, the Canadian Agricultural Safety Association will be holding its semi-annual board meetings in Windsor at the same time as the start of the NIFS conference.

And if you're thinking about bringing your family on the trip, specific family events are being planned, including a children's pizza party and a tour to a historic fort and a greenhouse complex complete with a petting zoo and indoor miniature golf course.

Conference attendees who like to play golf will have an opportunity during special tee times being set aside at a local golf course. Also, the International Freedom Festival will be taking place that week, with attractions close to the hotel.

For more information on the conference and on Windsor, visit these web sites: **www.ag.ohio-state.edu/~agsafety/NIFS/meetings03.htm** and **www.visitwindsor.com**

Tips on international travel to/from Canada

If you're planning on attending the National Institute for Farm Safety's (NIFS) Annual Conference in Windsor, Ontario, Canada in June, it's important that you be properly prepared in advance for international travel from the United States.

With the U.S. on "high" alert at the time of this printing, be sure to allow plenty of extra time for security checks at the U.S.-Canadian border – whether you're traveling by plane or by car. And don't be surprised if it takes you even longer to get through security when you're returning to the United States.

At the very least, be able to show security officials in both countries a government-issued photo ID (such as an unexpired driver's license) **and** a passport (by far the best, if possible) or a certified state or federal government-issued birth certificate (hospital-issued birth certificates are **not** acceptable). Due to heightened security worldwide, it's best to keep proof of citizenship on you at all times while in Canada.

There are a number of web sites where you can get good information on travel to and from Canada, security and customs requirements, driving in Canada, and the current situation worldwide.

These include: **www.visitwindsor.com** (look at Before You Go for information on Customs and Immigration); **www.immigration.gov/graphics/shared/lawenfor/bmgmt/inspect/docrequirements.htm**; **www.dhs.gov** (the Immigration & Borders link); and **www.dwtunnel.com** (the Detroit-Windsor Tunnel Corp.).

Timely debate is planned

If you've participated in NIFS annual conferences in the past, you'll know that one of the most popular events has been the *Both Sides of the Fence* debate. In these debates, volunteer panelists from NIFS have offered opposing perspectives on such controversial issues as whether parents should be held legally accountable for agricultural injuries to their own children if "reckless endangerment" seems indisputable, and whether or not tractors should be equipped with "extra rider" seats.

The National Farm Medicine Center is working with the Farm Safety Association Inc. to plan another interesting and informative *Both Sides of the Fence* debate during the upcoming June 22-26, 2003 NIFS Annual Conference in Windsor, Ontario, Canada.

Topics under consideration at press time included regulations in agriculture, NIFS advocacy, and off-road vehicle issues.

The purpose of *Both Sides of the Fence* is to generate dialogue over complex and controversial practices in agricultural health and safety.

Through this interactive process, it is hoped that these discussions will guide individuals and organizations in identifying their own positions on these issues.

News for NIFS members

Some important news for NIFS members: First, a reminder that NIFS's business year runs from June 1-May 31. So if it's at all possible to renew your membership and pay your dues by May 15, Administrative Director Cheryl Skjolaas would greatly appreciate it! If you didn't receive your membership renewal statement or have any other questions, Cheryl can be reached at Ph: 608/265-0568 or E-mail: nifsad@tds.net

Secondly, the results of the member balloting on NIFS's proposed new mission statement will be announced at the annual conference in Ontario in June. The draft statement, which was approved by the NIFS Board of Directors, reads: "NIFS is an organization dedicated to the professional development of agricultural safety and health professionals, providing national and international leadership in preventing agricultural injuries and illnesses to the agricultural community. NIFS provides opportunities for sharing information about research and intervention programs, improving professional skills and knowledge, networking and other supportive activities."

Upcoming Events

May 10-15, 2003:	**American Industrial Hygiene Conference and Expo** *Dallas, Texas*
May 29-30, 2003:	**The Clock is Ticking for Rural America: A Behavioral Health and Safety Conference** *Kansas City, Missouri*
June 22-25, 2003:	**American Society of Safety Engineers Safety 2003 Conference** *Denver, Colorado*
June 22-26, 2003:	**National Institute for Farm Safety 2003 Annual Conference** *Windsor, Ontario, Canada*
July 27-30, 2003:	**American Society of Agricultural Engineers Annual International Meeting** *Las Vegas, Nevada*
Sept. 5-12, 2003:	**National Safety Council Congress & Expo: Taking Safety to New Heights** *Chicago, Illinois*
Sept. 8-9, 2003:	**Challenges in Agriculture Health & Safety 2003** *San Francisco, California*
Oct. 19-23, 2003:	**Institute of Agricultural Rural and Environmental Health, University of Saskatchewan: Future of Rural Peoples International Symposium** *Saskatoon, Saskatchewan, Canada*

Agricultural Safety and Health Update

Recognizing the dangers of manure pits

By Barbara Mulhern
Editor, NIFS Update

In Macy, Indiana, a 4-year-old boy is found dead after apparently falling through a metal cover over a liquid manure pit on his family's farm. In Mansfield, Pennsylvania, a 15-year-old youth working on a dairy farm slides the tractor he is operating into an open manure pit, is engulfed, and dies. And in Kewaunee County, Wisconsin, a 53-year-old farmer and his 23-year-old son are discovered dead inside a 10-foot deep manure pit after a failed rescue attempt by the son.

NIFS members have long heard stories similar to these recent incidents. Yet throughout the country, farmers continue to fail to take proper precautions to protect themselves, their family members and their employees from the dangers of manure pits and other confined spaces.

"Entering a manure pit is like playing Russian roulette," Mark Purschwitz, former NIFS president and University of Wisconsin-Madison Extension agricultural safety and health specialist, says. "Some farmers have gone into manure pits without consequence, and they have a false sense of security. However, conditions can vary, and entering and exiting 10 times does not guarantee surviving the 11th entry."

One of the major hazards of manure pits is the accumulation of certain toxic gases. These gases include hydrogen sulfide (which is heavier than air and has a "rotten egg" smell in lower concentrations, but is odorless in high concentrations), carbon dioxide (also heavier than air), methane, and ammonia.

"As hard as it may be, no one should attempt to rescue a person who has collapsed in a manure storage facility without wearing a proper safety harness, without specialized training and experience, and without a properly maintained SCBA (self-contained breathing apparatus) respirator," Dr. Steve Kirkhorn, medical director of Occupational Health Services at the Immanuel-St. Joseph's-Mayo Health System in Mankato, Minnesota says.

It's also important that you never assume that the air inside a manure storage facility is safe to breathe unless it has been tested.

Here are some tips to pass on to farmers to reduce the risk of severe injuries and fatalities in manure pits and other confined spaces:

1. Survey your operation for the presence of confined spaces; then post sturdy, weatherproof warning signs on or next to them.

2. Make sure that these signs are understandable to any employees who can't speak English and to those who can't read.

3. Regularly inspect all warning signs to ensure that they are clean, readable, and have not been removed.

4. Cover or block off all openings to confined spaces. For example, cover openings to manure pits with metal grills and solid covers. Also, fence off all open manure pits.

5. Check with your state or federal OSHA office to see if you are covered by OSHA's Confined Spaces Standard (Title 29 CFR, Part 1910.146). If you are, become familiar with all of its requirements.

6. Train all family members and employees in the dangers of manure pits and other confined spaces.

Letter from the President

Let's all work to 'Get 'er Done!'

This year's NIFS Annual Conference is in Windsor, Ontario, June 22-26. The preliminary program indicates that this will be an outstanding meeting, thanks to the planning committee. This year's theme, *Life is a journey, travel safely*, is excellent in that it portrays the role we play as safety and health professionals, and maybe reflects on our personal lives. We hope that you can attend the meeting.

Here in Idaho, there is a local car dealer that uses an advertisement slogan "Get 'er Done!" The TV ads portray several scenarios in which a salesman calls the owner of the dealership and asks if a certain deal is alright, and the owner says: "Get 'er Done!" Wouldn't it be nice if we were able to do the same in the agricultural safety and health area? If some authority says that there are too many incidents in ag with a particular commodity, say potatoes, and says to reduce the numbers, "Get 'er Done!" So some paperwork is processed and the problem is solved.

In real life, we know this is not possible as we deal with people and traditions. It takes some persuasion, education, research, and perhaps regulation to "Get 'er Done." This leads to what NIFS is all about – networking with other professionals in the field to find out what others have done and perhaps share your experiences with your colleagues to find a better way. Then perhaps we will "Get 'er Done" with agricultural safety and health.

See you in Windsor!

Tom Karsky

Tom Karsky, NIFS President

The hazards of 'bypass starting'

Editor's note:
A special thanks to NIFS member Charles Brundage and Earle Morton, both product safety managers at AGCO Corp., for their technical assistance with this article.

NIFS *Update*
is published by the National Institute for Farm Safety, Inc., a nonprofit, voluntary organization for agricultural health and safety specialists.

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Each year, a few farmers, farmworkers or mechanics are crushed and seriously injured or killed after "bypass starting" a tractor or other vehicle that is in gear. "Bypass starting" involves touching a wrench or screwdriver to the terminals of the starter motor or to the solenoid of a tractor or to the starter of any self-propelled vehicle. This bypasses all neutral start switches in the tractor's electrical and hydraulic systems. After a few sparks, the circuit is completed and the starter engages, starting the engine.

Unfortunately, however, what also may happen is that the tractor or vehicle may be in gear and it suddenly lurches forward or backward – catching the farmer by surprise. The person is then pulled down by the drive wheel, and is crushed, seriously injured or killed.

Regularly checking to make sure neutral start switches are functioning correctly will help you avoid the temptation of bypass starting an engine – and may save your life. Here are some steps to follow while seated in the operator's seat:

1. Check to make sure there are no bystanders or obstructions nearby. On equipment with a separate fuel shut-off control, keep the control in the OFF position. For each test, turn the start switch to the START position only long enough to determine if the starter is being activated – that is, just a very brief ON-OFF.

2. Depress the clutch and brake pedals. Try to start the engine with the gearshift in neutral and the power takeoff (PTO) in neutral. The starter should engage.

3. Know that manufacturers have used a number of ways to provide neutral start protection for the transmission/ground drive. The switch may be operated by the gearshift, the clutch pedal, or, on some equipment with hydrostatic drive, on the ground speed control.

Depress the brake pedal but not the clutch pedal, place the PTO control in neutral, place the gearshift in a position other than neutral, move the ground speed control lever, if so equipped, away from the neutral position and try to engage the starter. The starter should not engage.

4. Depress the clutch and brake pedals. Try to start the tractor with the gearshift in neutral and the PTO engaged. Again, the starter should not engage.

5. If the starter engages in either test 3 or 4, be sure repairs are made to correct the problem before the equipment is used.

New resource

Longtime NIFS member Dennis Murphy, Extension safety specialist at Penn State University, has authored a new book entitled *Looking Beneath the Surface of Agricultural Safety and Health.*

The 112-page book, which includes a history of NIFS over the years, scrutinizes past and current approaches to agricultural safety and health, and offers suggestions. Among the topics included are injury trends and the nature of farm work.

The book is available from the American Society of Agricultural Engineers, Ph: 269/429-0300; Fax: 269/429-3852; or web site: **www.asae.org/pubs**

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National Institute for Farm Safety (NIFS)

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Primary Contact: Thomas Karksy, Pres.

Founded: 1962. **Members:** 204. **Membership Dues:** associate, $50 annual; full, $75 annual. **Staff:** 1. **Languages:** English. **Description:** Professional agricultural safety and health specialists devoting their efforts toward an improved agricultural injury and illnesses record through education, engineering, and research in the U.S. and Canada. Endorses use of Slow Moving Vehicle emblem and roll-over protection strutures throughout North America; has suggested use of hand signals for agricultural purposes. Contributes to the Cooperative Standards Program handled by the American Society of Agricultural Engineers; helps fund accident studies and encourages industry support and research. Holds annual institute. **Committees:**Home, Farmstead, and Leisure Time; Rural Occupational Health; Tractor and Machinery; Traffic and Transportation. **Affiliated With:** American Society of Agricultural Engineers; National Safety Council.

Conventions/Meetings: semiannual conference • conference, for safety professionals in agricultural safety and health, and interested individuals • annual conference.

SIC: 8621 - Professional Organizations; 8733 - Noncommercial Research Organizations
Subject Descriptor(s): Safety; Agricultural Education; Agriculture; Farming; Safety Education
Subject Category: Social Welfare Organizations

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