CRASHES INVOLVING FARM TRACTORS AND OTHER FARM VEHICLES/EQUIPMENT IN NORTH CAROLINA 2003-2008: An Update

Prepared for:
NC Agromedicine Institute
Greenville, NC 27834

BY:

Eric Rodgman, MPH
University of North Carolina
Highway Safety Research Center
Chapel Hill, NC

April 8, 2010

Table of Contents Page

The following information on farm tractor and farm equipment involved crashes in North Carolina was prepared by the University of North Carolina Highway Safety Research Center (HSRC) at the request of Rachel Emily Williams of the the NC Agromedicine Institute in Greenville NC. The data used are for the six-year period 2003-2008.

CRASH SELECTION OF FARM VEHICLES

The data used in this farm vehicle crash involvement descriptive study were obtained from the NC Crash Data collected by the NC DOT DMV Traffic Records Section as required by the state. UNC HSRC obtains copy of each new year's crash data and keeps it on the UNC CH secure campus data system. For this update on the trends and characteristics of farm vehicle involved crashes, crash calendar years 2003-2008 were used. All crash reporting types were included because the number of cases is generally small in comparison to the total number of vehicles in crashes.

It is important to note that any events involving farm vehicles that occur on private property are not necessarily included though some are. In addition, if no personal injury is reported and the total property damage involved is less than $1000.00, the event may not be reported by local Law Enforcement.

These cases were selected from all reported crashes to DMV where the vehicle type of a vehicle involved was noted as either a farm tractor or a farm equipment vehicle (usually not a tractor). In this six year period, there were 1,360 crashes where one of these farm vehicles was indicated as being involved in a crash.

FARM VEHICLES IN CRASHES TREND

Over the six-year period 2003-2008, farm tractor involved crashes have remained relatively stable averaging nearly 180 crashes per year (range 162-194 see Table 1). Crashes involving other motorized farm vehicles/equipment have remained relatively unchanged, with an average of nearly 50 per year (range: 37-58).

Table 1: Crash Year by Type of Farm Vehicle Involved in Crash

Frequency Percent Row Pct Col Pct	Farm Equipment	Farm Tractor	Total
2003	47 3.45 19.50 17.34	194 14.23 80.50 17.77	241 17.68
2004	42 3.08 19.00 15.50	179 13.13 81.00 16.39	221 16.21
2005	41 3.01 20.20 15.13	162 11.89 79.80 14.84	203 14.89
2006	37 2.71 16.23 13.65	191 14.01 83.77 17.49	228 16.73
2007	58 4.26 24.37 21.40	180 13.21 75.63 16.48	238 17.46
2008	46 3.37 19.83 16.97	186 13.65 80.17 17.03	232 17.02
Total	271 19.88	1092 80.12	1363 100.00

CRASH REPORT TYPE

Table 2 shows data documenting the relative severity of crashes based on the Crash Report Type involving any farm vehicles as reported to NC DMV. The data show that only 22 crashes involved a fatality. Five hundred of these crashes reported at least some

personal injury while slightly more than half of these 1360 crashes were Property Damage Only (no injury reported).

Table 2 Report Type of Crash by Crash Year (Counts of Crashes)

Frequency	2003	2004	2005	2006	2007	2008	Total
PDO	116	113	105	125	123	130	712
Fatal	6	0	5	5	3	3	22
Injury	92	81	76	77	78	73	477
Non-reportable	22	14	12	12	25	12	97
Private Property	1	2	3	2	3	3	14
PVA - PDO	1	11	2	6	5	10	35
PVA - Injury	2	0	0	0	0	1	3
Total	240	221	203	227	237	232	1360

CRASHES BY COUNTY AND REGION

Table 3.1 provides a list of crashes by individual county over the six year period from 2003 through 2008. The data are for both farm tractors and other farm equipment *combined.* Interestingly enough, Wake County had the highest number over the six year period with 54. The median number of crashes per county for the six-year period was xx. The smallest number of recorded crashes occurred in Avery, Camden, Cherokee, and Dare counties, each of which had one recorded crash. Table 3.2 shows the region of North Carolina where these farm vehicle crashes mostly occur. Nearly half of these crashes occur in the Coastal Region followed by nearly 40 percent occurring in the Piedmont.

Table 3.1 : County of Crash

COUNTY	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Wake	54	3.69	54	3.69
Robeson	49	3.35	103	7.04
Sampson	49	3.35	152	10.39
Guilford	46	3.14	198	13.53
Pitt	41	2.80	239	16.34
Nash	35	2.39	274	18.73
Wayne	35	2.39	309	21.12
Johnston	34	2.32	343	23.44
Columbus	33	2.26	376	25.70
Rowan	33	2.26	409	27.96
Duplin	32	2.19	441	30.14
Mecklenburg	29	1.98	470	32.13

Randolph	29	1.98	499	34.11
Iredell	27	1.85	526	35.95
Edgecombe	26	1.78	552	37.73
Lenoir	25	1.71	577	39.44
Rockingham	24	1.64	601	41.08
Surry	23	1.57	624	42.65
Bertie	22	1.50	646	44.16
Halifax	22	1.50	668	45.66
Union	22	1.50	690	47.16
Catawba	21	1.44	711	48.60
Alamance	20	1.37	731	49.97
Cleveland	20	1.37	751	51.33
Buncombe	19	1.30	770	52.63
Greene	19	1.30	789	53.93
Cumberland	18	1.23	807	55.16
Davidson	18	1.23	825	56.39
Gaston	18	1.23	843	57.62
Lincoln	18	1.23	861	58.85
Moore	18	1.23	879	60.08
Beaufort	17	1.16	896	61.24
Chatham	17	1.16	913	62.41
Orange	17	1.16	930	63.57
Forsyth	16	1.09	946	64.66
Harnett	16	1.09	962	65.76
Wilson	16	1.09	978	66.85
Bladen	15	1.03	993	67.87
Durham	15	1.03	1008	68.90
Person	15	1.03	1023	69.92
Brunswick	14	0.96	1037	70.88
Burke	14	0.96	1051	71.84
Craven	14	0.96	1065	72.80
Stokes	14	0.96	1079	73.75
Yadkin	14	0.96	1093	74.71
Cabarrus	13	0.89	1106	75.60
Northampton	13	0.89	1119	76.49
Onslow	13	0.89	1132	77.38
Pasquotank	13	0.89	1145	78.26
Stanly	13	0.89	1158	79.15
Caswell	12	0.82	1170	79.97
Franklin	12	0.82	1182	80.79
Haywood	12	0.82	1194	81.61
Henderson	12	0.82	1206	82.43
Hoke	12	0.82	1218	83.25
Wilkes	12	0.82	1230	84.07
Hertford	11	0.75	1241	84.83
Martin	11	0.75	1252	85.58
Pender	11	0.75	1263	86.33
New Hanover	10	0.68	1273	87.01
Carteret	9	0.62	1282	87.63
Currituck	9	0.62	1291	88.24
Granville	9	0.62	1300	88.86
Perquimans	9	0.62	1309	89.47
Rutherford	9	0.62	1318	90.09
Scotland	9	0.62	1327	90.70
Watauga	9	0.62	1336	91.32

Table 3.1 Continued

COUNTY	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Caldwell	8	0.55	1344	91.87
Jones	8	0.55	1352	92.41
Montgomery	8	0.55	1360	92.96
Warren	8	0.55	1368	93.51
Chowan	7	0.48	1375	93.98
Hyde	7	0.48	1382	94.46
Richmond	7	0.48	1389	94.94
Anson	6	0.41	1395	95.35
Polk	6	0.41	1401	95.76
Davie	5	0.34	1406	96.10
Jackson	5	0.34	1411	96.45
McDowell	5	0.34	1416	96.79
Tyrrell	5	0.34	1421	97.13
Vance	5	0.34	1426	97.47
Alleghany	4	0.27	1430	97.74
Pamlico	4	0.27	1434	98.02
Ashe	3	0.21	1437	98.22
Gates	3	0.21	1440	98.43
Transylvania	3	0.21	1443	98.63
Alexander	2	0.14	1445	98.77
Lee	2	0.14	1447	98.91
Macon	2	0.14	1449	99.04
Madison	2	0.14	1451	99.18
Mitchell	2	0.14	1453	99.32
Swain	2	0.14	1455	99.45
Washington	2	0.14	1457	99.59
Yancey	2	0.14	1459	99.73
Avery	1	0.07	1460	99.79
Camden	1	0.07	1461	99.86
Cherokee	1	0.07	1462	99.93
Dare	1	0.07	1463	100.00

Table 3.2: Region of NC Crash

Region	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Piedmont	520	38.24	520	38.24
Mountains	174	12.79	694	51.03
Coastal	666	48.97	1360	100.00

TYPE OF OTHER VEHICLE INVOLVED IN CRASH

Table 4 lists the type of non-farm vehicle involved in the crash by age of the non-farm vehicle driver/operator. Vehicle types are ranked in order of their frequency of occurrence. The data show that 2,4 door passenger vehicles were the most frequency involved followed by pickup trucks. With respect to the age of the non-farm vehicle operator involved in the crash, the data show that the number of crashes increases as a function of age for drivers age 15 to 60, and then decreases for non-farm vehicle drivers 61 and over.

Table 4: Other Vehicle Type by Other Vehicle Driver Age

Frequency	Under 14	15 to 20	21 to 30	31 to 60	61+	Total
Passenger Cars	0	98	116	307	123	644
Pickups	0	27	35	160	56	278
Lgt Trk (minivan ,panel)	0	0	2	19	6	27
SUV	0	21	21	87	13	142
Van	1	2	14	58	14	89
Commercial Bus	0	0	0	2	0	2
School Bus	0	0	0	7	1	8
Other Bus	0	0	0	1	0	1
2 ax, 6 tire trk	0	1	4	20	4	29
3 axle trk	0	1	0	6	5	12
Truck/trailer	0	1	1	10	3	15
Truck/Tractor	0	0	1	3	2	6
Tractor/semi-trlr	0	1	5	38	7	51
Unk heavy trk	0	0	0	1	0	1
Taxi	0	0	0	1	1	2
MC	0	2	7	8	2	19
Police	0	0	2	0	0	2
Total	1	154	208	728	237	1328

Table 5 shows the distributions of driver ages for the driver/operator of the farm equipment, either the farm tractor or some other piece of farm equipment. The most frequently represented age group for drivers of both farm tractors and for other farm vehicles/equipment is the 31-60 year old group. In the 21-30 year old group, drivers/operators of non-tractor vehicles were more likely to be involved in crashes than were the drivers/operators of farm tractors. The opposite trend was true for driver/operators in the 61 year and over group, where a higher percentage of crashes were recorded for tractor operators than for operators of other farm vehicles.

Table 5: Farm Vehicle Driver / Operator Age
By Type of Farm Vehicle Driven

Frequency	Farm Equip-ment	Farm Tractor	Total
Under 14	3	8	11
15 to 20	8	48	56
21 to 30	49	115	164
31 to 60	122	472	594
61+	28	151	179
Total	210	794	1004

CRASHES BY MONTH OF THE YEAR

Table 6 shows the frequency of farm tractor and other farm vehicle/equipment crashes

Table 6: Month of Crash

MONTH	Frequency	Cumulative Frequency
Jan	64	64
Feb	54	118
Mar	88	206
Apr	117	323
May	147	470
Jun	147	617
Jul	131	748
Aug	144	892
Sep	112	1004
Oct	152	1156
Nov	121	1277
Dec	83	1360

by month of the year. As would be expected, such crashes exhibit seasonal trends, with the highest number reported on October (fall preparatipon). Typically these crashes occur in the months of May through August while the December through March montths show the fewest.

CRASHES BY TIME OF DAY

Table 7 shows that farm tractor and other farm vehicle/equipment crashes peak during the period from 3pm to 6pm. Nearly 30 percent of all farm vehicle crashes were recorded during this period. Most of the remaining crashes occur during the remaining day hours.

Table 7: Hour of Day of Crash

HOUR	Frequency	Cumulative Frequency
00	4	4
02	3	7
03	1	8
05	13	21
06	20	41
07	43	84
08	74	158
09	106	264
10	90	354
11	105	459
12	88	547
13	114	661
14	118	779
15	162	941
16	108	1049
17	99	1148
18	95	1243
19	42	1285
20	37	1322
21	19	1341
22	11	1352
23	8	1360

CRASHES BY DAY OF WEEK

Table 8 shows that farm tractor and other farm vehicle/equipment crashes occur most frequently during the typical work day days of Monday through Friday.

Table 8: Day of Week of Crash

Weekday	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Tuesday	272	18.59	272	18.59
Thursday	261	17.84	533	36.43
Wednesday	257	17.57	790	54.00
Friday	227	15.52	1017	69.51
Monday	218	14.90	1235	84.42
Saturday	170	11.62	1405	96.04
Sunday	58	3.96	1463	100.00

FUNCTIONAL CLASS OF ROADWAY

Table 9 shows that approximately half of all farm tractor and farm vehicle/equipment crashes occurred on secondary routes. Another twenty percent occur on NC State Routes while US Routes account for about thirteen percent.

Table 9: Roadway Class where Crash Occurred

RDCLASS	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Interstate	18	1.35	18	1.35
US Route	176	13.15	194	14.50
NC Route	274	20.48	468	34.98
State Secondary Route	659	49.25	1127	84.23
Local Street	139	10.39	1266	94.62
PVA	50	3.74	1316	98.36
Private Road, Drway	16	1.20	1332	99.55
Other	6	0.45	1338	100.00

Frequency Missing = 22

CRASHES AND SPEEDING INVOLVEMENT

Table 10.1 shows the posted speed limit for the other vehicles involved in farm vehicle involved crashes. Nearly 70 percent of these crashes involved the other vehicle on a roadway with a posted speed limit of 55 MPH or higher. Table 10.2 shows the comparison of the drivers of farm vehicles in crashes to the drivers of the other vehicles in those same crashes looking at whether speeding was involved. The drivers of the other vehicles were indicated as speeding about 26 percent of the time compared to 2.5 percent for the drivers of the farm vehicles.

Table 10.1: Posted Speed Limit for Other Vehicle Involved

Posted Speed Limit	Frequency	Percent	Cumulative Frequency	Cumulative Percent
20 MPH Speed Limit or Less	11	0.86	11	0.86
25 to 35 MPH	159	12.42	170	13.28
45 & 50 MPH	219	17.11	389	30.39
55 MPH +	891	69.61	1280	100.00

Frequency Missing = 48

Table 10.2: Vehicle Type by Driver Speeding Involved

Frequency / Percent / Row Pct / Col Pct	N	Y	Total
Farm Vehicle	979	25	1004
	41.98	1.07	43.05
	97.51	2.49	
	49.92	6.74	
Other Vehicle	982	346	1328
	42.11	14.84	56.95
	73.95	26.05	
	50.08	93.26	
Total	1961	371	2332
	84.09	15.91	100.00

Table 11: Other Vehicle Driver Age by Speeding Involved

Frequency / Percent / Row Pct / Col Pct	N	Y	Total
Under 14	1	0	1
	0.08	0.00	0.08
	100.00	0.00	
	0.10	0.00	
15 to 20	106	48	154
	7.98	3.61	11.60
	68.83	31.17	
	10.79	13.87	
21 to 30	146	62	208
	10.99	4.67	15.66
	70.19	29.81	
	14.87	17.92	
31 to 60	554	174	728
	41.72	13.10	54.82
	76.10	23.90	
	56.42	50.29	
61+	175	62	237
	13.18	4.67	17.85
	73.84	26.16	
	17.82	17.92	
Total	982	346	1328
	73.95	26.05	100.00

Table 11 shows the age of the other vehicle drivers indicated as speeding. The younger other vehicle drivers ages 15-20 were most often indicated as speeding with 31 percent of them noted as speeding.

FIRST HARMFUL EVENT

Table 12 highlights the first harmful event that best describes the overall crash event which first occurred. The critical crash event most often involves a crash collision where one vehicle is making a left turn of the same roadway (359 cases), a rear-end collision where one vehicle is slowing down or stopping (349 cases), crash collisions where the two vehicles side-swiped each other in the same or opposite directions (total = 224 cases), and angle collisions of two vehicles (103 cases).

Table 12: First Harmful Event in Crash

First Harmful Event in Crash	Frequency	Percent	Cumulative Frequency	Cumulative Percent	
Unknown	1	0.07	1	0.07	
Ran off road - right	8	0.59	9	0.66	
Ran off road - left	1	0.07	10	0.74	
Overturn/Rollover	7	0.51	17	1.25	
Other Non-collision	11	0.81	28	2.06	
Pedestrian	3	0.22	31	2.28	
Pedalcyclist	3	0.22	34	2.50	
Movable Object	22	1.62	56	4.12	
Fixed Object	30	2.21	86	6.32	
Parked Vehicle	36	2.65	122	8.97	
Rearend Slow/stop	349	25.66	471	34.63	#2
Rearend, Turn	18	1.32	489	35.96	
Left Turn, same rdwy	359	26.40	848	62.35	#1
Left Turn, Diff rdwy	31	2.28	879	64.63	
Right Turn, same rdwy	20	1.47	899	66.10	
Right Turn, diff rdwy	14	1.03	913	67.13	
Headon	21	1.54	934	68.68	
Sideswipe, same dir	129	9.49	1063	78.16	#3
Sideswipe, opp dir	95	6.99	1158	85.15	
Angle	103	7.57	1261	92.72	#4
Backing Up	52	3.82	1313	96.54	
Other collision	47	3.46	1360	100.00	

DRIVER CONTRIBUTING CIRCUMSTANCES

Table 13 provides data on the likelihood of the farm vehicle driver/operator to have contributed to the crash event.. The data are reported separately for the drivers/operators of tractors and other farm vehicles/equipment together. The data for the period 2003-2008 indicate that the farm vehicle/equipment driver/operator was noted in slightly over half of the crashes as contributing to the involvement in the crash. The table provides information on the frequency of driver contributing circumstances noted by the investigating Law Enforcement Officer first on the scene. The leading contributing circumstances for the farm vehicle driver / operator were FTY (Failure to Yield) with 124 instances, inattention with 101 instances, crossed the center line or going the wrong way on the roadway with 63 instances, and improper turn with 52 instances.

Table 13: Farm Vehicle Driver / Operator Contributing Circumstance
by Farm Vehicle Driver Age

Frequency	Under 14	15 to 20	21 to 30	31 to 60	61+	Total	
None	1	26	80	317	88	512	
Disregard yield sign	0	0	0	2	0	2	
Disregard stop Sign	0	0	0	1	1	2	
Disregard traffic signal	0	0	1	2	0	3	
Disregard road markings	0	0	0	1	0	1	
Exceeded safe spd	0	0	3	0	0	3	
Fail to reduce spd	1	1	4	16	2	24	
Improper turn	0	6	8	28	10	52	#4
Crossed center Line/ wrong way	1	3	10	36	13	63	#3
Improper lane change	0	0	1	1	1	3	
Use of improper lane	0	2	1	3	3	9	
Oversteered	0	0	1	2	1	4	
Passed on curve	0	0	0	1	0	1	
Othr imprpr pass	0	0	3	4	1	8	
FTY	5	5	19	74	21	124	#1
Inattention	1	6	17	57	20	101	#2
Improper backing	1	1	8	16	5	31	
Improper parking	0	0	1	1	0	2	
Driver distractd	0	0	0	2	0	2	
Impropr/no signl	1	1	3	14	5	24	
FTC	0	0	1	0	0	1	
Careless/agressv	0	0	1	3	2	6	
Swerved to avoid	0	0	1	2	1	4	
Vision obstructd	0	0	2	9	0	11	

Table 13 Continued

Defective equip	1	4	6	23	11	45
Alcohol use	0	0	0	5	2	7
Drug use	0	0	0	1	0	1
Other	1	4	12	41	15	73
Unable to determ	1	5	8	25	3	42
.	0	2	0	5	1	8
Total	14	66	191	692	206	1169

Table 14 provides information on the violations cited for the driver of the non-farm vehicle. Data are provided as a function of the age of the non-farm vehicle driver. The data show that failure of the non-farm vehicle driver to reduce speed was the most frequent contributing circumstance with 321 instances reported. Improper passing was second with 231 instances noted while third was driver inattention with 153 instances noted.

Table 14: Other Vehicle Driver Contributing Circumstance by Other Vehicle Driver Age

Frequency	Under 14	15 to 20	21 to 30	31 to 60	61+	Total	
None	0	55	84	325	94	558	
Disregard yield sign	0	0	0	1	0	1	
Disregard stop sign	0	0	1	1	1	3	
Disregard other sign	0	0	0	1	1	2	
Disregard traf signal	0	0	1	2	1	4	
Disregard road markings	0	4	6	26	4	40	
Exceeded spd lmt	0	5	5	8	3	21	
Exceeded safe spd	0	9	2	7	4	22	
Fail to reduce spd	0	40	59	165	57	321	#1
Improper turn	0	0	1	4	1	6	
RTOR	0	3	0	0	0	3	

Table 14 Continued

Crossed center line	0	6	6	15	5	32
Improper lane change	0	0	3	3	0	6
Use of improper lane	0	0	0	3	0	3
Oversteered	0	1	2	2	1	6
Passed on hill	0	1	0	0	0	1
Passed on curve	0	1	5	6	3	15
Othr imprpr pass	0	31	31	125	44	231 #2
FTY	0	8	5	19	8	40
Inattention	1	19	34	73	26	153 #3
Improper backing	0	2	0	2	2	6
Driver distractd	0	0	2	2	0	4
Impropr/no signl	0	0	1	2	0	3
FTC	0	0	4	2	2	8
Careless/agressv	0	3	4	7	1	15
Swerved to avoid	0	2	4	6	1	13
Vision obstructd	0	2	0	3	2	7
Defective equip	0	0	3	3	1	7
Alcohol use	0	0	3	12	0	15
Drug use	0	0	0	2	0	2
Other	0	2	4	10	1	17
Unable to determ	0	8	0	31	14	53
.	0	0	0	2	2	4
Total	1	202	270	870	279	1622

SUMMARY

Between 2003-2008, there were 1360 crashes on North Carolina roads involving farm tractors and/or other farm vehicles/equipment. In these crashes, 1363 farm tractors or equipment vehicles were involved represented by 271 farm equipment vehicles and 1092 were farm tractors. Of the 1360 crashes, 22 of them involved a fatality and 480 of them involved personal injury. The top five counties for farm vehicle involved crashes were Wake with 54, Robeson and Sampson tied with 49 each, Guilford with 46, and Pitt with 41. The coastal region of NC represented about half of these farm vehicle crashes while the Piedmont had about 38 percent.

Crashes followed seasonal trends with most occurring in the period from April to November. On a given day, these types of crashes were more likely to occur between 1 pm and 5:59 pm. During the week, these crashes were more likely to occur on Tuesday, Wednesday or Thursday.

In terms of roadway class, nearly half of these crashes occurred on state secondary routes followed by NC routes and US routes. When looking at the role of vehicle speeding in these crashes, the other vehicle was indicated "speeding" by either exceeding a safe speed for the circumstances, exceeding the roadway posted speed limit, or failing to reduce speed to avoid a crash. In general, younger drivers were more likely to be noted as speeding. Nearly 70 percent of these farm vehicle involved crashes occurred on roadway where the posted speed limit for the other vehicle was 55 MPH or higher. The difference in speed for most farm vehicles (traveling at a lower speed) and other vehicles traveling 55 mph or faster is a serious crash risk problem.

For the farm vehicle drivers, the most frequent contributing circumstances noted were FTY (Failure to Yield) with 124 instances in first place, driver inattention with 101 in second place, farm vehicle crossing the center line with 62 in third place, and driver executing an improper turn with 52 for fourth place. For the other vehicle drivers, failure to reduce speed was noted 321 times for first place, driver improperly passed with 231 instances for second place, and driver inattention with 153 instances for third place.

The other vehicle involved with these farm vehicles was most likely to be a passenger car (644 cars noted), a pickup truck (278 pickup trucks noted), or an SUV 142 (SUVs noted). The drivers were most likely to be in the 31 to 60 age range. For the farm vehicles drivers, nearly 60 percent were 31 to 60.

These collisions typically involve vehicles not adjusting to a left turn, not allowing for the vehicle slowing or stopping, or side-swiping each other trying to pass in either direction.

RECOMMENDATIONS

The NC Safety Community can use some of the key crash data trends noted in this descriptive study to help focus attention on the problem of farm vehicle crashes in North Carolina. First, the NC farming community needs to be made aware of the serious risks involved when farm tractors and other farm equipment are moved using the NC roadways. Second, NC Law Enforcement need to be aware of the same problem of crashes between farm vehicles and other vehicles.

Many of these crashes occur on the State Secondary Roads with speed limits 55 MPH where the speed of the farm vehicles is much slower than the speed of the other vehicles traveling these same roads. Farm equipment drivers need to be sure their farm vehicles are made as "visible" as possible to be seen by the other vehicles to minimize confrontations and crashes. Having warning signs placed at strategic locations could help with alerting the other vehicle drivers to the possibility of farm vehicles using the roads.

Developing a few Public Service Announcements to be shown on NC TV could help remind the NC driving community during the busiest times of the year. Local county officials can help by working in their communities to advise farmers and local law enforcement when these vehicles would most likely be on the move.

The NC safety community needs to continue to work together to develop ways to alert the NC driving public. Hosting conferences like this does a lot to broadcast this particular traffic safety problem to the people of North Carolina.