HHS Public Access
Author manuscript
J Agromedicine. Author manuscript; available in PMC 2025 January 01.

Published in final edited form as:
J Agromedicine. 2024 January ; 29(1): 34–43. doi:10.1080/1059924X.2023.2282137.

Recruitment of Row Crop Farmers into a Research Study to Assess Farm Hazards

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Abstract

Introduction: Farmers are at an elevated risk for injuries and therefore, highly sought after for research studies. However, their participation in research studies is low.

Objectives: To examine how characteristics of the farmer, farm location, and timing of recruitment contact impact the probability that farmers will engage and participate in a study of injuries and related farm hazards.

Methods: Study data were obtained from the Farm Safety Study conducted at the University of Iowa between June 2019 and March 2020. We used recruitment data from participants enrolled using *Farm Journal* magazine subscription lists. Multinomial logistic regression was used for predictive modeling. Predictor variables included the time of day and the farm season in which phone contact for study recruitment was attempted, as well as the rurality of the farm. Two models were created to characterize screening and participation of farmers in the study.

Results: Farm season and time of day of the last recruitment call increased the likelihood of farmers being screened for study participation and completing the study. Specifically, contacting farmers during the growing season and during the daytime, regardless of farm rurality, resulted in higher probabilities of participation.

Conclusions: Studies of agricultural injury may be more efficiently conducted, and with higher participation responses, when circumstances of the recruitment call are considered. This work serves as a starting place for much-needed methodologic research to identify factors that increase participation of farmers and farm workers in research studies.

Keywords

Agriculture; Study Recruitment; Farmers; Injury; Research

Introduction

Agriculture is widely recognized as one of the most dangerous industries both domestically and internationally [1]. Tractor rollovers, machine entanglements, and falls are frequent agricultural injury mechanisms and account, in part, for high rates of fatal and nonfatal injuries on farms [2,3]. To better understand risk factors for injury in agriculture, investigators often conduct epidemiological studies examining associations between farm characteristics and injury events. Such studies are frequently limited, however, by low participation among agricultural workers [4]. Among studies that have examined farm injury among farmers and farm workers in the last ten years, the average reported participation rate was 47%, ranging from 11% to 79% [5–12]. Furthermore, the participation response rate of farmers has been declining in large studies such as the United States Department of Agriculture (USDA) crop surveys [13]. Rural populations in general consistently exhibit lower participation rates in research studies in comparison to their urban counterparts [13–15]. Therefore, effective and efficient recruitment strategies need to be identified to maximize agricultural worker participation.

Agricultural populations have unique characteristics that present barriers to research study recruitment such as the isolated nature of rural areas, in addition to an aging rural population [14,15]. According to the U.S. Census Bureau, from 2012–2016, a larger proportion of rural populations (17.5%) were 65 years or older compared to populations in urban areas (13.8%), and this trend is expected to continue [16,17]. Several barriers, including lack of transportation, health-related factors, and limited discretionary time, lead to difficulty in recruiting older populations for research studies [15]. Furthermore, distrust of community outsiders and time commitment conflicts are described as significant barriers to recruiting rural farmers in particular [14,18].

Previous studies have explored methods for increasing enrollment of farmers into research studies [4,15,19,20]. Farmers are more likely to participate when offered monetary incentives [20,21] and when such incentives are provided prior to the study starting [19]. In-person recruitment rather than recruitment through mail or email increases the likelihood of study enrollment among farmers [13,20]. Engaging influential community members, including those from informal networks, can improve participation of rural older adults in research [15]. While financial incentives and in-person recruitment can be effective at increasing farmer participation, such methods are resource intensive. Therefore, identification of less costly recruitment strategies is needed.

Identification of recruitment characteristics that maximize farmer participation in research studies, such as time and date of contact, may result in greater participation and more efficient research efforts. However, few studies have examined how such characteristics impact farmer recruitment [18,19]. The purpose of this paper was to examine how characteristics of the farmer, farm location, and timing of recruitment contact impact the probability that farmers will engage with investigators seeking to recruit them into a research study involving the collection of data on farm hazards and related injuries.

Methods

Study Participants

This study was part of a larger farm safety project (the Farm Safety Study, or FSS) funded by the National Institute for Occupational Safety and Health through the Great Plains Center for Agricultural Health at the University of Iowa. The purpose of the parent study was to evaluate farm safety using a structured on-site inspection of farm equipment and farm buildings and to measure associations between hazards on the farm and the prevalence of farm injuries. The checklist included evaluation of self-propelled vehicles, fixed machinery, powered portable implements, farm buildings and structures, and portable equipment associated with fall risk.

Row crop (e.g., corn, soybeans) farmers potentially eligible to participate in the FSS were screened by telephone and were eligible to participate if they were a current owner/operator of a row crop farm that was within a two-hour drive of the University of Iowa. Row crop farmers were primarily recruited from *Farm Journal* magazine subscription lists available for purchase from the magazine publisher. *Farm Journal* magazine is a "source of practical information on crops, livestock and general agriculture for farm families" with more than one million subscribers nationwide (https://www.agweb.com/farm-journal-magazine). Each subscription list included the subscriber's name, address, phone number, age, and approximate farm acreage. Other recruitment strategies used in the FSS included advertising on social media sites; attending agricultural community events and conferences; advertising in local co-ops, extension offices, and public meeting spaces; and asking participants to make referrals. For purposes of this paper, only participants recruited though the *Farm Journal* subscription lists (98% of participants) were included in the analyses.

Two subscription lists were purchased from *Farm Journal*, the first of which included telephone numbers of subscribers from ten counties in Eastern Iowa adjacent to Johnson County (where the University of Iowa is located) and within a two-hour drive of the University of Iowa. The second list (purchased to increase the size of the source population) included telephone numbers of subscribers from an additional eighteen counties in Eastern Iowa also within a two-hour drive of the University of Iowa. The lists were provided to the Iowa Social Science Research Center (ISRC) at the University of Iowa where staff called subscribers up to five times for recruitment into the FSS. Screening and recruitment calls were made by the ISRC between June 2019 and March 2020.

Across the two lists, ISRC received contact information for 2,830 subscribers, of which 764 (27%) were contacted once and removed from the list for further contact due to problem numbers (e.g., phone disconnected, fax number). Another 587 (21%) were never contacted due to suspending study activities because of COVID-19. Participation in the FSS involved a researcher conducting a 60–90 minute in-person farm visit to complete a newly developed Hazard Assessment Checklist with the farm owner/operator (or designee) [22]. Each participant received $50 in cash at the end of the farm visit. Participation status of the remaining 1,479 *Farm Journal* subscribers is provided in Figure 1.

The two research questions addressed in this paper are:

(1) What variables are associated with an increased probability that a row crop farmer answered their phone and agreed to be screened for study eligibility (i.e., screened) compared to (a) row crop farmers who answered the phone call but did not agree to be screened (i.e., not screened) or (b) row crop farmers who did not answer the phone call after five attempts or return ISRC staff messages (i.e., not contacted) (Figure 1)?

(2) What variables are associated with an increased probability that an eligible row crop farmer completed the Hazard Assessment Checklist during a farm visit (i.e., farm visit completed) compared to row crop farmers who were either "not screened" or "not contacted" (Figure 1). Note that we were unable to compare probabilities of study participation among those who declined to participate or withdrew from the study for two reasons: (1) a small sample size (N = 20 for declined or withdrew), and (2) failure of convergence in the model fitting procedure, which was likely due to sparse data patterns?

Measures

Predictor variables to address the two research questions were identified from the lists acquired from *Farm Journal* and the call schedule maintained by the ISRC. Variables available from the *Farm Journal* subscription lists included farmer age, farm size (in acres), and farm location (address, city, county). ISRC variables included time of day of last attempted telephone contact, day of week of the last attempted telephone contact, and farm season the subscriber was last called for study participation. All predictors were represented categorically, as either ordinal or nominal variables,

Farmer age was categorized as <45, 45–54, 55–64, 65–74, and 75+ years based on the distribution of age provided in the *Farm Journal* subscriber lists. Farm size was categorized as <2000, 2000–2999, and 3000+ acres also based on the distribution provided in the *Farm Journal* subscriber lists. Farm location was divided into "metropolitan" and "non-metropolitan" using rural-urban continuum codes (RUCC) [23]. The RUCC is a county-level measure based on the county's population size, degree of urbanization, and adjacency to a metropolitan and non-metropolitan area [23]. Time of day ISRC staff made the last phone call to the row crop farmer was divided into daytime (7:00 am – 4:59 pm) and evening (5:00 pm – 11:59 pm) categories. Day of week was categorized as weekday (Monday-Friday) and weekend (Saturday, Sunday). Farm season was categorized based on the "usual" corn planting and harvesting dates in Iowa as defined by the USDA National Agricultural Statistics Service: Growing (June 4 – September 16), Offseason (December 13 – April 22), and Planting/Harvest (April 23 – June 3 and September 17 – December 12) [23].

Statistical Analysis

Frequencies and percentages were calculated for all categorical variables and compared across research question 1 groups (screened, not screened, not contacted) and research question 2 groups (farm visit completed, not screened, not contacted) using chi-square tests. To address our two research questions, we formulated and fit two baseline-category multinomial logistic regression models to assign predicted probabilities for a row crop farmer (1) being classified as screened, not screened, or not contacted (research question 1), and (2) being classified as farm visit completed, not screened, or not contacted (research question 2).

Predictor variables that were considered modifiable by investigators and had a p-value less than 0.15 based on chi-square tests were included in the models. These variables were time and farm season of the ISRC screening and recruitment call and county-level farm location (defined in this analysis by RUCC). The Bayesian Information Criterion (BIC) was used to guide variable selection and to determine whether any two-way interactions warranted inclusion.

Multinomial logistic regression models were used to estimate predicted probabilities of study participants being screened for the FSS or completing the farm visit. In general, multinomial logistic regression models provide estimated probabilities of a subject being classified into any one of several mutually exclusive categories. The estimated probabilities, also known as predicted probabilities, are calculated based on the covariate values that are pertinent to the subject and must sum to one across the categories. The fitted model not only produces point estimates of the probabilities, but also standard errors, which facilitates the construction of confidence intervals.

Based on the BIC, no two-way interactions were included in the models. The final fitted models used to calculate the predicted probabilities were additive in form, and featured those predictors supported by the BIC. The Hosmer-Lemeshow “goodness of fit” test was used to assess how well the data conformed to these final fitted models. All data analyses were conducted using SAS version 9.4 (copyright © 2016 SAS Institute Inc).

Results

Among the 1,479 subscribers, 420 were “not screened” (69.5% of those contacted) and 875 were “Not contacted” (59.2%) (Figure 1). Among those screened (N = 184), 99 (54%) were eligible to participate in the FSS and 85 (46%) were not eligible. Eligible individuals either completed the farm visit (N = 79, participation response rate = 80%), declined the farm visit (4%), or withdrew from a scheduled farm visit (16%).

Overall, most row crop farmers included in this analysis were between the ages of 55 and 64 (Table 1, Table 2) with a median age of 63 years. The majority of row crop farmers had farming operations of less than 2000 acres with a median of 1498 acres. Among RUCC groups, about 60% of the row crop farmers were in non-metropolitan counties. More than half of the row crop farmers were last contacted by the ISRC during the offseason (50.9%), during evening hours (55.7%), and during the week (82.8%) (Table 1, Table 2).

<u>Research Question 1:</u> *What variables are associated with an increased probability that a row crop farmer answered their phone and agreed to be screened for study eligibility (i.e., screened) compared to (a) row crop farmers who answered the phone call but did not agree to be screened (i.e., not screened) or (b) row crop farmers who did not answer the phone call after five attempts or return ISRC staff messages (i.e., not contacted)?*

Row crop farmers who were contacted during the planting and harvest season and in the evening hours and who farmed in a non-metropolitan county had the highest predicted probability of being screened for study participation among the 12-farm season, time of day, and RUCC group combinations (predicted probability = 0.285, 95% CI: 0.189, 0.382) (Table 3). The predicted probability of row crop farmers being screened for study participation was also relatively high (i) when called during the growing season and during daytime hours regardless of RUCC location (*non-metropolitan* RUCC predicted probability = 0.257, 95% CI: 0.177, 0.337, and *metropolitan* RUCC predicted probability = 0.251, 95% CI: 0.151, 0.350) and (ii) when called during the growing season and during the evening hours for those who farmed in a metropolitan area (predicted probability = 0.258, 95% CI: 0.177, 0.339). Those who farmed in non-metropolitan counties and who were contacted during the evening hours, and during the offseason (predicted probability = 0.069, 95% CI: 0.040, 0.098) or growing season (predicted probability = 0.070, 95% CI: 0.035, 0.105) were the least likely to be screened (Table 3).

The likelihood of a row crop farmer not being screened for study participation was highest among those contacted in the evening during the planting and harvest season and those whose farms were located in a non-metropolitan county (predicted probability = 0.617, 95% CI: 0.513, 0.772), and among those contacted during the day in the growing season and where the farm was located in a metropolitan county (predicted probability = 0.683, 95% CI: 0.578, 0.789). Finally, the probability of a row crop farmer not answering the phone was highest when recruitment calls were made during the evening, during the offseason, and among those farming in non-metropolitan counties (predicted probability = 0.827, 95% CI: 0.784, 0.870), followed by calls made during the day and during the planting and harvest season among those farming in metropolitan counties (predicted probability = 0.759, 95% CI: 0.705, 0.814) (Table 3).

Research Question 2: *What variables are associated with an increased probability that an eligible row crop farmer completed the Hazard Assessment Checklist during a farm visit (i.e., farm visit completed) compared to row crop farmers who were either "not screened" or "not contacted."*

Eligible row crop farmers who were contacted during the growing season, during daytime hours, and who farmed in a metropolitan county were most likely to enroll in the FSS and complete the farm visit among the 12-farm season, time of day, and RUCC combinations (predicted probability = 0.166 95% CI: 0.079, 0.253) (Table 4). Being contacted during the growing season, being contacted during daytime hours, and operating a farm in a non-metropolitan county was also associated with a relatively high probability of completion (predicted probability = 0.125 95% CI: 0.046, 0.205). Those who were contacted during the planting and harvest season, during daytime hours and who farmed in a metropolitan county (predicted probability = 0.026, 95% CI: 0.007, 0.044) or non-metropolitan county (predicted probability = 0.027, 95% CI: 0.007, 0.047) were least likely to enroll in the FSS and complete the farm visit. Higher predicted probabilities of not being screened were associated with calls made during the growing season and during daytime hours regardless of rurality of the farm (growing season, daytime hours, and *metropolitan* county predicted probability = 0.721, 95% CI: 0.616, 0.845; growing season, daytime hours, and *non-metropolitan* county predicted probability = 0.799, 95% CI: 0.705, 0.892). The likelihood of a row crop farmer not answering the phone (i.e., the row crop farmer was "not contacted") was similarly high during the planting/harvest season and daytime hours for both farm RUCC locations (planting/harvesting, daytime hours, and *metropolitan* RUCC predicted probability = 0.865, 95% CI: 0.826, 0.904; planting/harvest, daytime hours, and *non-metropolitan RUCC* predicted probability = 0.804, 95% CI: 0.752, 0.857) (Table 4).

Discussion

In this paper, we examined the effects of recruitment and farm characteristics on the probability of recruiting row crop farmers in Iowa into a study to assess injuries and injury-related farm hazards. Row crop farmers were more likely to be screened for study participation if contacted during the growing season and during daytime hours regardless of their farms being located in metropolitan or non-metropolitan counties. This finding carried over to row crop farmers who completed the Farm Safety Study farm visit. Contacting row crop farmers during the offseason did not improve the probability of participation.

Our paper is the first that we know of to examine how timing of the recruitment telephone contact and farm location impact the probability of a row crop farmer participating in a research study. We found that row crop farmers contacted during daytime hours were more likely to be screened and to participate in the study compared to those who were contacted during evening hours. Given that row crop farmers are more likely to work during the day, it may be they are less likely to answer phone calls in the evening when they are fatigued. However, an alternative explanation may be that the majority of row crop farmers who were screened and who participated in the Farm Safety Study were farming only part-time and were more available to respond during the day. The probability of being screened and participating in the study did not vary by metropolitan and non-metropolitan locations of the farm. This finding may imply that farm location is less important compared to time of day and farming season when recruiting row crop farmers into a study.

Our findings differed from other studies, in which row crop farmers were more likely to participate in research studies if they were approached during the offseason [18,19]. We suspect these differences may have occurred due to differences in type of employment classification (full-time versus part-time) and other factors that may contribute to the availability of row crop farmers to participate in research studies. Known differences between our study and the study by Prinz et al. (2009) were related to study eligibility (i.e., grain workers on rural farms), investigators having local contacts in the communities of interest, and farm state (i.e., Nebraska) [18]. Differences between our study and the study by Aurora et al. (2020) included how farm owners/operators were contacted for study participation (i.e., mailed questionnaire and/or in-person at farm shows), farm state (i.e., included Missouri and Ohio), type of farming (i.e., included all commodity types), and incentive amount ($1 with mailed survey and $10 check when questionnaire completed) [19]. Investigators of future studies should consider examining how farming full-time (compared to part-time) and type of farming (e.g., livestock, dairy, row-crop) contribute to research study participation when these data are available. However, investigators also need to consider what recruitment variables they can control (e.g., time, season of recruitment), compared to variables that may not be available in existing data sources prior to recruitment (e.g., farming habits and type).

Our study had a high participation rate relative to the average of other farm injury studies [5–12]. One reason for the higher participation rate could be due to differing eligibility criteria. However, our method of recruiting study participants could have also increased participation rates. The literature suggests that methods of recruitment involving personal contact through phone calls or approaching individuals in-person result in higher participation rates [7,11,12] compared to methods that use less personal approaches such as mail-out surveys or passive approaches such as posting flyers [5,6,8–10]. Since farmers and farm workers can have a distrust of community outsiders [14,18], they may be more inclined to participate in research studies if they are recruited by researchers through personal contact, where expectations and mutually beneficial goals can be discussed, questions can be asked, and trust can be built.

There were several strengths of this paper. First, there are few studies of which we are aware that have empirically examined factors that influence the likelihood that row crop farmers will participate in a research study, and these few existing studies vary from ours with respect to study goals and methods examining farmer and farm worker recruitment [4,13,19,20]. Our study provides insight into how future research studies may improve study recruitment and participation by contacting row crop farmers during a specific time of day and farming season, both of which can be controlled and managed by study investigators.

This study also had limitations. This paper only included row crop farmers who were subscribers of *Farm Journal* magazine. Findings may be different if another data source were used. In addition, demographic characteristics of our study population, including age and farm size, differed from the average farmer in Iowa and the US. Specifically, the average age of our study population (63.1 years) was higher compared to the Iowa and national average ages of farmers (57.4 and 57.5 years, respectively) [24,25]. Further, the average farm size of our study population (1926 acres) was larger than the Iowa state average of 294.6 acres for corn for grain row crop farms [26]. These differences may weaken the generalizability of our findings. In addition, we do not know why row crop farmers did not answer the phone when called and whether they would have agreed to be screened and/or would have been eligible for the study if they had, therefore creating the possibility of misclassification between comparison groups.

Conclusion

Based on predictive modeling methods, row crop farmers were most likely to participate in an agricultural injury research study if they were contacted during the growing season and during daytime hours. They were less likely to participate if contacted during the offseason. This study provides a basis for better recruiting row crop farmers into research studies using only recruitment protocol data (i.e., time of day and farming season when recruitment calls are made). Future studies should explore how other variables, including full-time employment status and type of farming, affect study recruitment and how predictive models can be further used to improve farmer participation in research.

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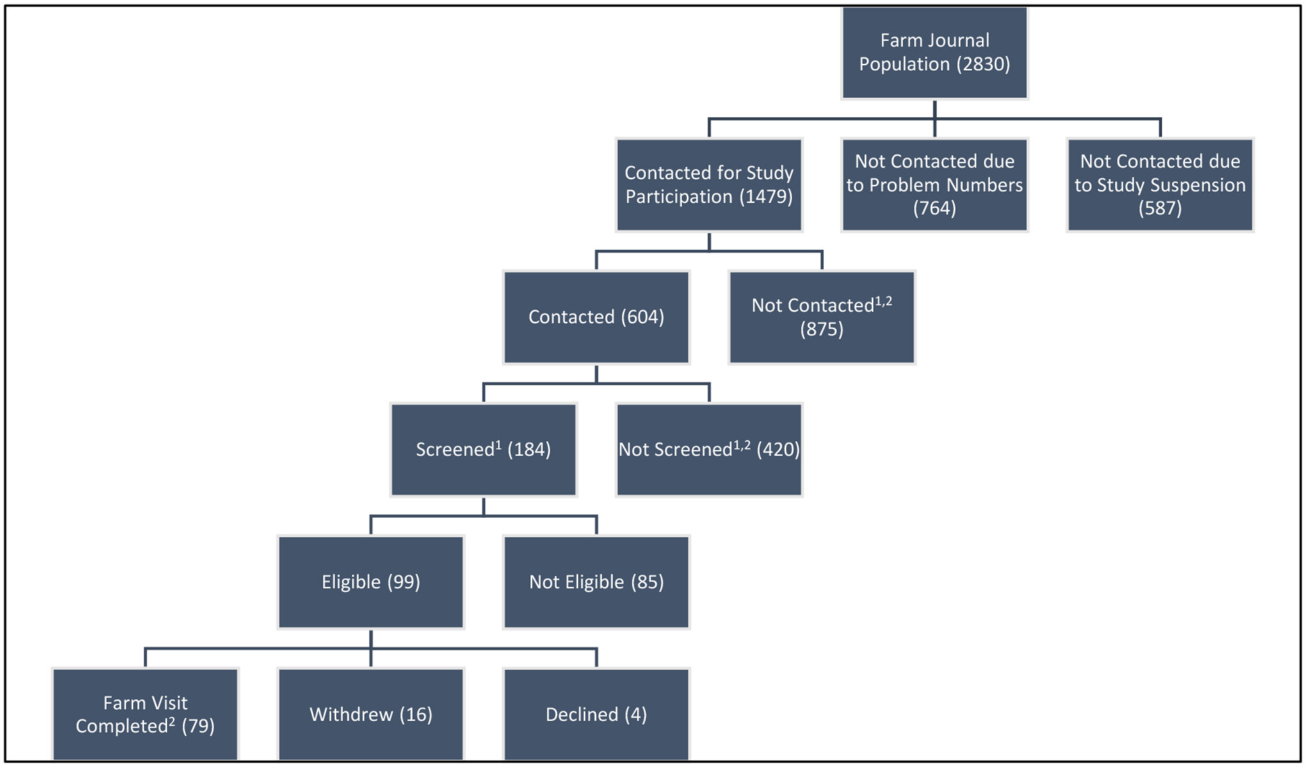

Figure 1.

Flowchart of Farm Safety Study participants recruited from *Farm Journal* subscriber lists (N = 2830).

[1]Components of Research Question 1

[2]Components of Research Question 2

Table 1.

Descriptive statistics for all row crop farmers (n=1479), row crop farmers who were screened for the Farm Safety Study (n=184), row crop farmers who were not screened (n=420), and row crop farmers who could not be contacted (n=875).

	Screening and Recruitment Groups								
	All Row Crop Subscribers (n=1479)		***Screened (n=184)***		***Not Screened (n=420)***		***Not Contacted (n=875)***		χ^2 **p-values**
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Demographics of Farmers									
Acre Group									0.82
<2000	1030	69.6	128	69.6	300	71.4	602	68.8	
2000–2999	267	18.1	33	17.9	75	17.9	159	18.2	
3000+	182	12.3	23	12.5	45	10.7	114	13	
Age Group									<0.01
<45	315	21.3	36	19.6	105	25	174	19.9	
45–54	167	11.3	19	10.3	31	7.4	117	13.4	
55–64	414	28.0	35	19	91	21.7	288	32.9	
65–74	362	24.5	34	18.5	108	25.7	220	25.1	
75+	221	14.9	60	32.6	85	20.2	76	8.7	
RUCC Groups									0.12
Metropolitan	597	40.4	79	42.9	152	36.2	366	41.8	
Non-Metropolitan	882	59.6	105	57.1	268	63.8	509	58.2	
Timing of Recruitment Call									
Farming Season									<0.01
Growing	227	15.4	60	32.6	111	26.4	56	6.4	
Offseason	753	50.9	74	40.2	199	47.4	480	54.9	
Planting/Harvest	499	33.7	50	27.2	110	26.2	339	38.7	
Time of Day									0.01
Daytime (7:00 am – 4:59 pm)	655	44.3	68	37	160	38.1	427	48.8	
Evening (5:00 pm-11:59 pm)	824	55.7	116	63	260	61.9	448	51.2	
Day of Week									0.28
Weekday	1224	82.8	151	82.1	338	80.5	735	84	
Weekend	255	17.2	33	17.9	82	19.5	140	16	

Table 2.

Descriptive statistics of row crop farmers who completed the Farm Safety Study (n=79), row crop farmers who were not screened (n=420), and row crop farmers who could not be contacted (n=875).

	Screening and Recruitment Groups						
	Farm Visit Completed (n=79)		***Not Screened (n=420)***		***Not Contacted (n=875)***		**χ^2 p-values**
	N	**%**	**N**	**%**	**N**	**%**	
Demographics of Farmers							
Acre Group							0.57
<2000	50	63.3	300	71.4	602	68.8	
2000–2999	17	21.5	75	17.9	159	18.2	
3000+	12	15.2	45	10.7	114	13	
Age Group							<0.01
<45	16	20.3	105	25	174	19.9	
45–54	12	15.2	31	7.4	117	13.4	
55–64	24	30.4	91	21.7	288	32.9	
65–74	17	21.5	108	25.7	220	25.1	
75+	10	12.7	85	20.2	76	8.7	
RUCC Groups							0.12
Metropolitan	35	44.3	152	36.2	366	41.8	
Non-Metropolitan	44	55.7	268	63.8	509	58.2	
Timing of Recruitment Call							
Farming Season							<0.01
Growing	22	27.9	111	26.4	56	6.4	
Offseason	38	48.1	199	47.4	480	54.9	
Planting/Harvest	19	24.1	110	26.2	339	38.7	
Time of Day							<0.01
Daytime (7:00 am – 4:59 pm)	29	36.7	160	38.1	427	48.8	
Evening (5:00 pm-11:59 pm)	50	63.3	260	61.9	448	51.2	
Day of Week							0.26
Weekday	67	84.8	338	80.5	735	84	
Weekend	12	15.2	82	19.5	140	16	

Table 3.

Predicted probabilities with 95% confidence intervals, comparing row crop farmers who were screened (n=184), not screened (n=420), and not contacted (n=875).

Farm and ISRC Call Characteristics			Predicted Probabilities (95% CI)		
Farm Season	**Time of Day**	**RUCC Group**	**Screened**	**Not Screened**	**Not Contacted**
Growing	**Daytime**	**Metropolitan**	0.251 (0.151, 0.350)	0.683 (0.578, 0.789)	0.066 (0.020, 0.112)
		Non-Metropolitan	0.257 (0.177, 0.337)	0.345 (0.261, 0.430)	0.398 (0.309, 0.487)
	Evening	**Metropolitan**	0.258 (0.177, 0.339)	0.437 (0.346, 0.528)	0.305 (0.225, 0.386)
		Non-Metropolitan	0.070 (0.035, 0.105)	0.186 (0.131, 0.241)	0.744 (0.681, 0.807)
Offseason	**Daytime**	**Metropolitan**	0.080 (0.045, 0.115)	0.269 (0.211, 0.327)	0.652 (0.590, 0.714)
		Non-Metropolitan	0.099 (0.066, 0.133)	0.209 (0.162, 0.256)	0.692 (0.637, 0.747)
	Evening	**Metropolitan**	0.112 (0.083, 0.141)	0.295 (0.253, 0.338)	0.593 (0.547, 0.639)
		Non-Metropolitan	0.069 (0.040, 0.098)	0.104 (0.071, 0.138)	0.827 (0.784, 0.870)
Planting/Harvest	**Daytime**	**Metropolitan**	0.083 (0.049, 0.117)	0.158 (0.111, 0.204)	0.759 (0.705, 0.814)
		Non-Metropolitan	0.142 (0.087, 0.196)	0.334 (0.260, 0.407)	0.525 (0.446, 0.604)
	Evening	**Metropolitan**	0.147 (0.091, 0.204)	0.437 (0.356, 0.517)	0.416 (0.338, 0.494)
		Non-Metropolitan	0.285 (0.189, 0.382)	0.617 (0.513, 0.772)	0.098 (0.034, 0.162)

Table 4.

Predicted probabilities with 95% confidence intervals, comparing row crop farmers who completed the Farm Safety Study (n=79), who were not screened (n=420), and who were not contacted (n=875).

Farm and ISRC Call Characteristics			Predicted Probabilities (95% CI)		
Farm Season	**Time of Day**	**RUCC Group**	**Farm Visit Completed**	**Not Screened**	**Not Contacted**
Growing	**Daytime**	**Metropolitan**	0.166 (0.079, 0.253)	0.721 (0.616, 0.845)	0.114 (0.040, 0.188)
		Non-Metropolitan	0.125 (0.046, 0.205)	0.799 (0.705, 0.892)	0.076 (0.023, 0.129)
	Evening	**Metropolitan**	0.096 (0.036, 0.155)	0.420 (0.323, 0.517)	0.484 (0.385, 0.584)
		Non-Metropolitan	0.084 (0.030, 0.138)	0.540 (0.441, 0.640)	0.376 (0.281, 0.470)
Offseason	**Daytime**	**Metropolitan**	0.038 (0.010, 0.067)	0.191 (0.134, 0.248)	0.771 (0.709, 0.833)
		Non-Metropolitan	0.038 (0.013, 0.063)	0.280 (0.220,0.340)	0.682 (620, 0.744)
	Evening	**Metropolitan**	0.061 (0.031, 0.091)	0.216 (0.167, 0.266)	0.723 (0.668, 0.778)
		Non-Metropolitan	0.060 (0.037, 0.082)	0.312 (0.267, 0.356)	0.628 (0.582, 0.675)
Planting/Harvest	**Daytime**	**Metropolitan**	0.026 (0.007, 0.044)	0.109 (0.074, 0.145)	0.865 (0.826, 0.904)
		Non-Metropolitan	0.027 (0.007, 0.047)	0.169 (0.119, 0.219)	0.804 (0.752, 0.857)
	Evening	**Metropolitan**	0.070 (0.027, 0.112)	0.361 (0.283, 0.440)	0.569 (0.488, 0.651)
		Non-Metropolitan	0.063 (0.024, 0.103)	0.480 (0.395, 0.565)	0.456 (0.373, 0.540)