

New Extension Approaches to Serving Agricultural Media in Advancing Farm-Life Safety Communications

Abstract

The study described here focused on needs and opportunities for Extension to serve agricultural media more fully in addressing new safety risks in agriculture, one of the nation's most hazardous industries. The study was conducted in the context of major broadening of channels used by agricultural media. A mixed-methods approach included a national survey to identify views and suggestions from agricultural journalists about covering farm-life safety. A companion literature review addressed case studies and other research featuring Extension collaborations with media for advancing farm-life safety. Findings revealed expanding opportunities and ideas for Extension personnel, with implications for Extension program areas beyond farm-life safety.

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Introduction

Safety aspects of farming and ranching fit within a long history of channeling Extension information through agricultural and general media (Everly, 1971; Graham, 1927; Knox, 1961; Lockard et al., 2010; O'Neill, 1987; Oskam, 1992; Schwab, Miller, Shutske, & Ohmans, 2005; Wilson, 1963). Safety information continues to invite priority for Extension as agriculture remains one of the nation's most hazardous industries (Agricultural Safety and Health Council of America [ASHCA], 2015). Farming and ranching activities create an agricultural work death rate eight times higher than the all-industry average (Murphy & Lee, 2009). In 2014, the occupational injury cost in U.S. agriculture was \$8.3 billion in medical costs and lost productivity, with a typical cost of \$1 million for one tractor overturn (ASHCA, 2015). With regard to human cost, every 3.5 days a child dies in an agriculture-related incident (National Children's Center for Rural and Agricultural Health and Safety, 2014).

The research reported here is based on major structural and operational changes in both agriculture and agricultural media. These changes affect needs and opportunities for Extension to involve agricultural media more fully and effectively in farm-life safety.

Changes in Agriculture

Recent changes in agriculture pose new challenges for maintaining safe agricultural working environments. For example, larger machinery, equipment, storage facilities, and livestock confinement systems increase risks of vehicle rollovers, falls, grain bin suffocation, zoonotic infections, and respiratory hazards (Rabinowitz et al., 2013; U.S. Occupational Safety and Health Administration, 2017). More small-scale niche farming options, such as specialty produce, direct marketing, heritage breeds, local wineries, and agritourism, pose a wide variety of safety challenges. A broadening, multicultural workforce raises language issues and features families new to farming (many with children) who need safety information (Byler, Kiernan, Steel, Neiner, & Murphy, 2013; Irwin & Poots, 2015; Liebman, Juarez-Carillo, Reyes, & Keifer, 2014).

Changes in Agricultural Media

Agricultural periodicals have become increasingly specialized due to changes rooted in farm demographics, advertiser preferences, and other forces (Evans & Salcedo, 1974). New farm radio and television program services have emerged, often as program networks serving smaller stations. Computers, websites, online search systems, mobile phones, thousands of software applications, and newer information developments have created new media channels.

Even so-called traditional media, such as agricultural magazines, radio, and television, are increasingly becoming multimedia platforms. A 2015 national Millennium Research survey revealed that about 20% of farmers/ranchers listen to farm broadcasts on a medium other than radio (streaming video/audio, podcasts, web videos, etc.) (National Association of Farm Broadcasting, 2015). A 2013 national survey indicated that 39% of agri-marketer respondents expected digital media to comprise 20%–50% of their advertising, marketing, and public relations budgets by 2017 (Truffle Media Networks, 2013). Simultaneously, traditional agricultural media, such as farm periodicals and rural radio and television broadcasts, continue to be major sources of information for farm and ranch families. Examples of recent findings on farmer information sources are presented in Table 1.

Table 1.
Surveys Relating to Major Sources of Information for Farmers

Year	Survey	Results
2014	Readex Research national farmer survey ^a	81% of respondents reported reading agriculture magazines
2015	Millennium Research nationwide survey of farmers and ranchers ^b	77% of respondents reported listening to farm news, weather, agricultural information on the radio
2014	Ipsos Marketing, Agriculture and Animal Health national farmer survey ^c	84% of respondents considered farm broadcasting "extremely" or "somewhat important" in their daily decisions and operational
2013	Survey of farmers in east-central Iowa ^d	Farmers indicated that newspaper and magazine articles were used sources of agricultural safety and health information; 77% at least monthly

^aAgri Media Council of American Business Media. (2014). *2014 media channel study*. Retrieved from <http://www.sija.net/Portals/0/pdf/ABM/TobeDistributed%20-%20AgriMediaCouncil2014Reportv2.pdf>

- bNational Association of Farm Broadcasting. (2015). *Farm Radio connects: Wave 1 to 3 research*. Retrieved from <https://nafb.com/sites/default/files/blogs/Marketing%20and%20Research/Farm%20Radio%20Connects>
- cNational Association of Farm Broadcasting. (September 2014). *2014 Media Usage Study*. Retrieved from <https://nafb.com/sites/default/files/pages/1202/nafbmedia-usagerelease.pdf>
- d Chiu, S., Cheyney, M., Ramirez, M., & Gerr, F. (2015). Where do agricultural producers get safety and health information? *Journal of Agromedicine, 20*(3), 265–272.

Research Objective and Questions

The aforementioned substantial changes prompted a fresh look at new opportunities for Extension to involve agricultural media more fully and effectively in farm-life safety. Four research questions guided that effort:

1. What interests and attitudes do agricultural journalists hold in terms of covering safety of farm and ranch families and their communities?
2. What safety information sources and what media platforms are agricultural journalists using?
3. What kinds of safety information do agricultural journalists invite from Extension?
4. What new potentials exist for enhancing Extension/media collaborations regarding farm-life safety?

Methods

The research project described here, which was sponsored by the Upper Midwest Agricultural Safety and Health Center, was approved by the Institutional Review Board, University of Illinois (IRB Protocol Number 14166). A mixed-methods design comprised two methods for gathering quantitative and qualitative data. One method involved an online survey of professional agricultural journalists. The other involved an analysis of recent research about Extension relations with agricultural media regarding farm-life safety.

Serving as the population for the online survey were 150 agricultural journalist members of the American Agricultural Editors' Association (AAEA). They were editors, writers, and photojournalists employed by, or freelancing for, general and specialized agricultural periodicals in the United States and Canada. Representing editorial departments of top-circulation agricultural periodicals and media organizations, AAEA is one of the nation's largest agricultural journalist organizations.

An online survey was conducted through REDCap (Research Electronic Data Capture), a secure web-based electronic data capture tool for conducting research. A 17-question instrument included Likert-scale and check-all-that-apply response formats, plus demographic items and opportunities for open responses. Selection of topics and terminology was guided by a literature review of farm safety communications and content review of agricultural periodicals. Additionally, an informal face-to-face pretest of items by 25 journalists and media professionals was implemented.

The survey instrument was delivered via email to the journalists, with two reminders sent during the 3-week response period. No follow-up sampling was conducted among nonrespondents. Completed questionnaires were returned by 41 respondents, for a 27% response rate. Gender profiles of respondents and the survey population were identical (56% male, 44% female). No baseline data were available to compare the agricultural reporting

experience of respondents (71% had 20 years or more of experience) with those of the survey population.

The companion review of quantitative and qualitative research literature involved analysis of 168 articles and case reports about communications related to farm safety. The literature included articles in scholarly journals, research news in trade journals, project reports from organizations, and other formats. The literature derived from a variety of organizational settings, including Extension (13%).

Results

Research Question 1. What Interests and Attitudes Do Agricultural Journalists Hold in Terms of Covering Safety of Farm and Ranch Families and Their Communities?

Findings suggested that respondents considered agricultural occupational safety as very important (Table 2).

Table 2.

Importance of Media Coverage of Safety

Level of importance	No. of respondents	% of respondents
Important	32	78
Somewhat important	8	20
Neutral	0	0
Somewhat unimportant	1	2
Unimportant	0	0

Three fourths (30/41) of the respondents reported that they and/or their family members had experienced serious farm injuries. Such personal connections to trauma could explain why 93% of respondents expressed interest in covering agricultural safety (Table 3).

Table 3.

Interest in Covering Agricultural Safety

Level of interest	No. of respondents	% of respondents
Interested	24	59
Somewhat interested	14	34
Neutral	1	2
Somewhat uninterested	1	2
Uninterested	1	2

More than 80% of respondents reported believing that farm magazines and farm papers do an adequate or somewhat adequate job of covering safety and injuries. They gave a similar positive assessment of their own coverage of such topics (Table 4).

Table 4.
Adequacy of Farm Magazine Coverage

Level of adequacy	Occupational safety No. (%)	Injury reporting No. (%)	Journalist rating of own reporting No. (%)
Adequate	12 (29)	9 (22)	13 (32)
Somewhat adequate	22 (54)	23 (56)	17 (41)
Neutral	3 (7)	3 (7)	5 (12)
Somewhat inadequate	3 (7)	5 (12)	5 (12)
Inadequate	1 (2)	1 (2)	1 (2)

More than 80% of respondents said available safety information is adequate or somewhat adequate for covering and understanding farm safety (Table 5). However, several comments challenged safety advocates to do a better job. For example, one respondent said, "Safety information seems to come out once a year for farm safety week and then goes silent."

Table 5.
Adequacy of Available Information in Aiding Understanding/Covering of Safety

Level of adequacy	No. of respondents	% of respondents
Adequate	14	34
Somewhat adequate	20	49
Neutral	2	5
Somewhat inadequate	5	12
Inadequate	0	0

Research Question 2. What Safety Information Sources and What New Media Platforms Are Agricultural Journalists Using?

Survey results indicated that the participating journalists looked first to university Extension specialists and farm safety organizations for safety information (Table 6). Additional sources mentioned included farmers who experienced injuries, insurance company representatives, and companies that received good safety ratings.

Table 6.

Sources Used in Covering Stories About Safety

Source	No. of respondents	% c responc
University specialists/educators	36	88
Farm safety organizations	32	78
Farm associations	24	59
U.S. Department of Agriculture/other federal, state agencies	23	56
Other	7	17
Journalists in other media	5	12
None	2	5

Table 7 reveals a heavy and varied use of social media by journalists in disseminating information.

Table 7.
Media Skills and Social Media Tools Used

Skill, social media tool	No. of respondents	% of respondents
Long-form sharing (Facebook, Google+)	31	76
Video sharing (YouTube, Blip)	23	56
Microblogging (Twitter)	23	56
Long-form blogging (WordPress)	19	46
Photo sharing (Pinterest, Flickr)	19	46
Audio sharing (Vocaroo, Sound Cloud)	4	10
Other	2	5

Research Question 3. What Kinds of Safety Information Do Agricultural Journalists Invite from Extension?

Although 68% of respondents answered that education/prevention articles are most appropriate for reporting on safety (Table 8), their comments strongly indicated that traumatic incident articles are most *effective* in telling the safety story. The statement "Attention spans are typically more attuned following a real incident" reflected a common sentiment.

Table 8.
Types of Articles Most Appropriate for Reporting on Safety

Type of article	No. of respondents	% of respondents
Education, prevention	28	68
Follow-up to accident	1	2
Both	12	29

According to the survey, the most useful types of information are agricultural injury statistics and safety expert contact information (Table 9). In the absence of comprehensive national data, methods for collecting information about agricultural fatalities have been suggested (Seltzer, Murphy, & Yesalis, 1990). Contact lists of safety experts already exist or can be compiled.

Table 9.
Types of Information Found Useful in Covering Safety

Type of information	No. of respondents	% of respondents
Statistics on agricultural injury	38	93
Contact lists of safety experts	35	85
Death/injury reviews	27	66
Email alerts for safety-related articles	26	63
Public service ads	8	20
Other	1	2

Research Question 4. What New Potentials Exist for Enhancing Extension/Media Collaboration Regarding Farm-Life Safety?

Six areas of opportunity for Extension information emerged from the survey results and the related review of literature.

1. Findings call for a broadened view of the role of agricultural media as channels for Extension information serving farm and ranch families. The survey confirmed that print publishers of the past now offer social media platforms as well as traditional publications. The literature review revealed the use of other platforms, such as websites, mobile communications, farm radio and television programming, seminars, trade shows, and direct mail services. In new ways these channels can help multiply the safety outreach efforts of Extension. This broadened approach is consistent with a trend toward more comprehensive approaches in promoting safe behaviors (Beaudin, Jacoby, & Quick, 1997; Gharis, Bardon, Evans, Hubbard, & Taylor, 2014; Upper Midwest Agricultural Safety and Health Center, 2016).

2. Extension can be encouraged by respondents' expressed interest in safety information focused on prevention. This interest dovetails with results of prevention-oriented case studies documenting successful collaborations between agricultural media and Extension personnel. Other suggestions reported in the literature involved helping agricultural media cover and take part in safety activities such as day camps and training workshops (Hartling, Brison, Crumley, Klassen, & Pickett, 2004). Considerable research emphasized the value of partnerships in breaking down silos of effort (Bradley, Driscoll, & Bardon, 2012; Burgus, Schwab, & Shelley, 2012; Murphy & Lee, 2009; Ozegovic & Voaklander, 2011; Palermo & Ehlers, 2002; Richter, Hall, & Deere, 2007; Stone, 2006; Typhina, Bardon, & Gharis, 2015).
3. Survey findings identified special potential for agricultural media to use Extension information suited to social media such as long-form sharing, microblogging and long-form blogging, and video and photo sharing.
4. The survey and literature review revealed several kinds of farm safety information that would be of value: (a) more timely statistics about safety incidents and fatalities, (b) contact lists that would help journalists gain access to safety experts, and (c) case examples illustrating how safe work habits and other preventive activities have averted tragedies (Reed, Claunch, & Haurylko, 2008; Rein, 1990).
5. Three fourths of the survey respondents said they considered farm safety regulations to be "least effective" in creating a safe work environment. However, the literature review identified a need for more information agricultural media can use to report on existing, new, and proposed regulations.
6. Related literature also indicated a need for enhanced information in two other arenas: (a) new and emerging safety issues in agriculture, such as those stemming from precision farming, unmanned aerial systems, health in livestock confinement facilities, and increasingly larger and more complex equipment and operations, and (b) safety and health of special audiences, such as farmworkers, minorities, and children (Webster, Rogers, & Mariger, 2001; Wright, Marlenga, Lee, & Jepsen, 2013).

Discussion

Summary Observations

Results of the study described here revealed encouraging signs of potential for Extension professionals to collaborate more fully with agricultural media regarding farm-life safety, and to mutual advantage. Media respondents expressed active interest in covering safety more effectively and offered suggestions that Extension may be in good position to act on. Their reported desire to emphasize preventive information may lead to greater media participation in farm-life safety efforts.

The findings also have implications well beyond the safety focus of the analysis reported here. Potentials for enhanced relations with agricultural media extend across other Extension program areas.

Limitations

Several limitations should be noted in terms of scope and methodology for the research project. Discussion of changes in agriculture and the media serving agriculture is illustrative rather than comprehensive. Survey findings come from agricultural writers, editors, and photographers who are members of one of the nation's

largest agricultural journalist organizations, AAEA. However, findings do not represent others, such as agricultural reporters with general news media, agricultural radio and television broadcasters, or many of the agricultural journalists associated with livestock breed periodicals. Also, the extent to which responses were representative of all agricultural journalists in AAEA remains uncertain, especially less-experienced journalists.

Research Opportunities

Results of the analysis revealed promising research possibilities. Further research can involve feedback from a broader base of agricultural journalists. Researchers can dig more deeply into changes within agriculture and agricultural media to identify safety-related topics and audiences Extension can address. The findings suggest potential for experiments that can identify and track approaches for new Extension and media partnerships. Further research involving farm-life safety can identify the information needs and sources of personnel within the expanding niche farming enterprises. Additionally, researchers can gather communications-guiding information from special at-risk audiences such as children and migrant workers.

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