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Latinos Safety Behaviors Related to English Literacy as Reported by Dairy Producers in Kewaunee County, Wisconsin

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Abstract: Safety issues related to low English literacy levels of Latinos on dairy farms are a potential concern to employers. A survey of safety behaviors was completed by 19 dairy producers who employ Latinos in Kewaunee County, Wisconsin. At least two-thirds of the respondents rated five of the 10 safety behaviors as of moderate, high, or extreme concern due to their employees' ability to read, write, speak, or understand English. At least half of the respondents reported providing assistance to employees in functional areas such as housing, law enforcement, and schools. Recommendations for dairies, Extension education, and literacy organization were determined.

Introduction

Across the United States, many farms are growing larger and require hired help to complete daily tasks such as fieldwork, milking, and general farm work. Latino workers are commonly hired to perform these tasks. According to 2001 - 2002 United States Department of Labor agriculture statistics, there are over 1.6 million farm workers in the United States. Foreign-born workers comprise a large share of the hired crop workers labor force. Seventy-five percent are estimated to originate from Mexico, and an additional 2% originate from Central America. Statistics do not reflect how many foreign-born employees work on livestock and dairy operations.

University of Wisconsin - Extension educators observed that Latino workers comprise an increasing portion of the workforce on livestock and dairy operations. Maintaining a trained workforce poses challenges, especially maintaining a workforce that understands safety protocols regarding animal care and machinery operations. University of Wisconsin - Extension's Dairy Workers' Training modules offer training and classes for Latino workers in Spanish. The question is to what extent are low English literacy levels of Latinos on dairy farms related to safety behaviors or issues?

Situation

Danger is an accepted way of life when living and working in the agriculture industry. Because agriculture is such a dangerous industry, focusing on English literacy as it impacts safety is a worthy effort, particularly for Spanish-speaking dairy workers who may have difficulty understanding and following safety protocols, which is complicated by the language difference.

The Literacy Partners of Kewaunee County, Inc., a literacy organization, was interested in studying the needs of Spanish-speaking dairy workers because many of these individuals were students in the adult tutoring program. University of Wisconsin Extension, in cooperation with Literacy Partners of Kewaunee County, Inc., began to explore concerns about safety issues on the farm with Latino workers due to their inability to understand English.

A search of PubMed, Agricola, CAB Abstracts, ERIC, Education Full Text, Google, and the National Agricultural Safety Database revealed very little on English literacy and agricultural injuries of dairy workers. Because literacy and illiteracy revealed nothing except a dated article on pesticide training for Latin America that was tested on California Spanish-speaking agricultural workers, a broader search with variations on keywords revealed a few sources of interest: (variations of spanish* or hispanic* or latino* or mexican* or migrant* or immigrant*) and (dairy or milking or agricultur*) and (injur* or accident* or safe* or emergenc*)

While the search revealed some literature on agricultural field workers, there were very few results found about dairy workers. One study of 15 Colorado dairies measured the relationship of training methods to the incidence of work-related injuries. Dairy workers identified direct contact with livestock or machinery as the main cause for work-related injuries, and most injuries occurred while medicating sick cows or milking (Garry et al., 2006).

The same study also revealed that entry-level safety training had no protective effect on the reported incidence of injury in dairy workers. The study suggested that language and cultural mannerisms used by the instructor could possibly enhance the communication of important information.

A separate search of the *Journal of Extension* using the previously listed keywords revealed nothing specifically on English literacy and agricultural injuries of dairy workers. Articles focused on work skills rather than safety behaviors. Examples are "A Spanish Language Milker's School for Idaho Dairy Employees" (Dalton & Jensen, 2006) and "Milking and Calf Care School for Hispanics in Cache County" (Boman, Israelsen, & Young, 2006). Research and education on English literacy as it relates to the safety behavior of dairy workers is an important emerging issue, thus it underscores the importance of the study reported here.

A search of the Proliteracy America Web site, the largest volunteer-based adult literacy organization in the United States, revealed no information about English literacy related to safety of non-English speakers.

To gain information from dairy producers, a short questionnaire was developed. The purpose of the questionnaire was to gain an understanding about literacy needs of Latinos working on dairy farms in Kewaunee County. The research examined the following questions.

- How many Latinos are working on dairy farms in Kewaunee County, Wisconsin?

- What are safety concerns on the farm that may be related to the employees' ability to read, write, speak, or understand English?
- What assistance are dairy producers providing employees in daily living skills because of English literacy needs?

Method

The Survey Process

The Dairy Employee Literacy Questionnaire was developed by Needs Analysis Work Group of the Literacy Partners of Kewaunee County, Inc. and the Agriculture and Family Living Educators of Kewaunee County UW-Extension. The questionnaire was reviewed by two UW-Extension educators with extensive experience conducting programs for dairy workers and a Human Development Specialist at UW-Madison.

A cover letter explained the purpose of the survey. The first page of the questionnaire informed the producer of the Human Subjects Protection, such as anonymity. This was followed by questions that asked producers about their level of concern about English literacy issues related to emergency and safety issues on the farm. Participants were asked to respond on a 1-5 point scale, with 1=No Concern, 2=Low Concern, 3=Moderate Concern, 4=High Concern, and 5=Extreme Concern.

The second page of the questionnaire asked producers about literacy issues and the extent to which they were required to provide assistance to employees in eight daily living areas. Participants were asked to respond on a 1-3 point scale with 1=None, 2=Some, 3=A Lot. Demographic questions and two open-ended questions concluded the questionnaire.

A list of 32 dairy producers known to employ Latino workers was generated based on previous UW-Extension Family Living and Agriculture program attendance in Kewaunee County. The questionnaire was sent to the list in June 2007. The questionnaire was sent from the Kewaunee County UW-Extension office and included a postage paid addressed envelope for return.

Description of Respondents

Number of cows is a common method to describe farm size in the dairy industry. The following definition was utilized to describe farm size in this sample based on the number of cows on the dairy:

- Small farms - 250 or fewer cows
- Medium farms - 251-749 cows
- Large farms - 750 or more cows

Table 1 contains descriptions of respondents' workforces.

Table 1.
Descriptions of Respondents' Work Forces

Farm Size	Number of Cows	Number of Respondents	General Laborers	Spanish-Speaking Laborers	Percentage Latino
Small	1,025	5	18	9	50%
Medium	3,830	8	52	41	81%
Large	7,950	6	103	76	74%
Total	12,805	19	173	126	73%
Note: Percentages are rounded.					

The respondents in the study rely on Latino labor for a significant part of their workforce. Table 1 shows 50% of the workforce on small farms are Spanish speaking, 81% on medium sized farms are Spanish speaking, and 74% on large farms are Spanish speaking. On average, respondents reported 73% of their laborers use Spanish as their first language.

The results represent farms milking approximately 41% (12,805) of the total cows in Kewaunee County (United States Department of Agriculture, 2007).

Results

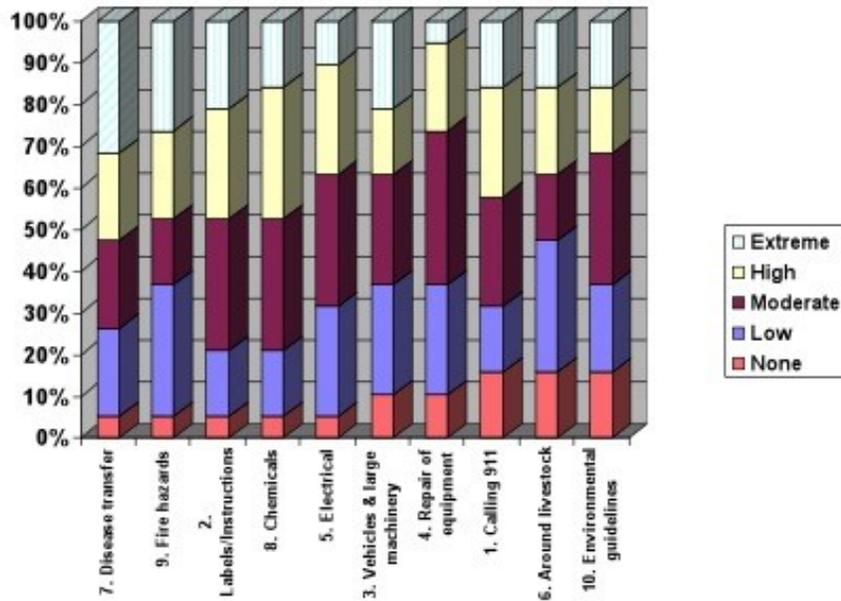
Dairy Producer Concerns About Safety as They relate to English Language Literacy Among Their Latino Employees

Dairy producers were asked:

"To what extent are you concerned about the following issues among your employees regarding their ability to read, write, speak, or understand English?" Ten possible concerns were listed:

1. Emergencies – Understanding how to call 911 and what to call for
2. Warning labels and operating instructions or protocols for moving parts of machinery such as power take-offs, hydraulics, pumps and gears
3. Operating directions for vehicles, large machinery, cars, tractors, etc.
4. Directions or terms related to repair of equipment
5. Electrical safety behaviors
6. Safe behavior around livestock
7. Hygiene-preventing disease transfer in the milking parlor or other areas of the farm
8. Handling chemicals and dangerous materials
9. Potential fire hazards on the farm
10. Environmental guidelines

Figure 1.
Summary of English Literacy-Related Safety Concerns of Dairy Producers



As the Figure 1 illustrates, over 84% of the dairy producer respondents expressed at least a low level of concern for every item.

At least two-thirds of the respondents rated five of the 10 safety categories as at least of moderate concern, including understanding protocols for warning labels and operating instructions for moving parts of machinery such as power take-offs, hydraulics, pumps, and gears (79%); handling chemicals and dangerous materials (79%); hygiene-preventing disease transfer in the milking parlor or other areas of the farm (74%); emergencies - understanding how to call 911 and what to call for (68%); and electrical safety behaviors (68%).

Sixty-three percent of the respondents rated each of four of the other five safety behaviors as of at least moderate concern: operating directions for vehicles, large machinery, cars, tractors; directions or terms related to repair of equipment; potential fire hazards; and environmental guidelines. Over half (52%) of the respondents were at least moderately concerned with the remaining safety behavior studied, Safe behavior around livestock.

Hygiene-preventing disease transfer in the milking parlor or other areas of the farm was rated an extreme concern by the highest percentage of respondents. Almost one-third (32%) of the respondents were very concerned with this safety issue and responses did not vary by the size of the farm.

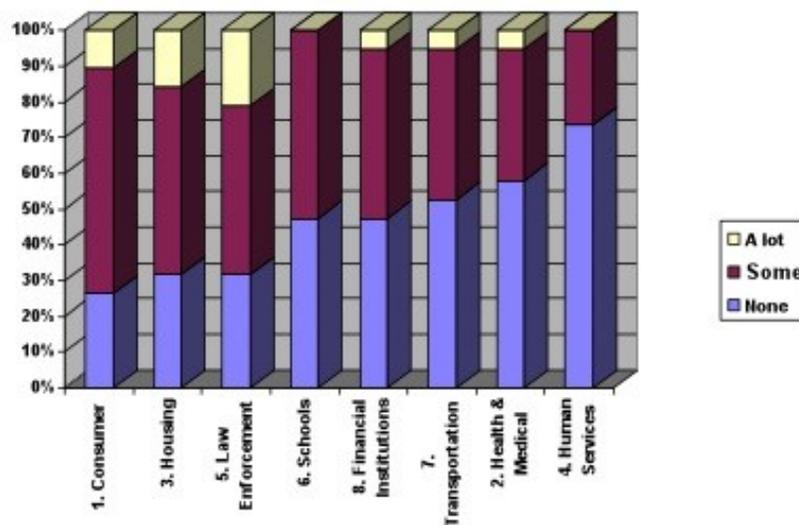
Daily Living Skills Assistance Provided to Latino Employees

The participants in the survey were then provided with a second set of questions to which they could respond with either "None", "Some", or "A Lot":

"In answering the questions, please think about your employees regarding their ability to read, write, speak, or understand English. Circle the answer that best describes your level of assistance. To what extent have the following employee issues required your assistance?"

1. Consumer (communication with utility or phone company, paying bills)
2. Health & Medical (making appointments, communication with health care provider, following prescribed medical treatment)
3. Housing (locating housing, understanding rental agreements, communicating with providers)
4. Human Services (communication about mental health, abuse, neglect etc.)
5. Law Enforcement (communication about violations)
6. Schools (locating schooling for children)
7. Transportation (attaining transportation and vehicle maintenance)
8. Using Financial Institutions

Figure 2.
Daily Living Skills Assistance Provided by Dairy Producers



As Figure 2 illustrates, over half of the dairy producers provided at least some employee assistance in five of these areas: Consumer (74% of respondents), Housing (69%), Law Enforcement (58%), Schools (53%), and Financial Institutions (52%). Less assistance was provided in the other three areas of Transportation (47%), Health & Medical (42%) and Human Services (42%). In every skill area, producers were more likely to provide "some" than "a lot" of assistance. The highest reported categories where "a lot" of assistance was given by dairy producers were Law Enforcement (4 of 19) and Housing (3 of 19).

Conclusion and Recommendations

Literacy, the ability to read, write, speak, and understand English, plays a large part in the understanding of safety issues by Spanish-speaking dairy workers. Increasing the understanding of English will enable workers to function in a safe manner in the long term; however, it does not address the urgency of learning safety information now. Several actions can address the English literacy and safety issue for Spanish-speaking dairy workers.

- UW-Extension should continue to research, develop, promote, and conduct Dairy Workers' Training modules that address employee work skills such as animal handling, skid steer training, and milking

procedures. Modules address topics in Spanish and English through PowerPoint, video, handouts, and hands-on activities.

- UW-Extension could assist dairy producers in developing an individual Farm Safety Plan with protocols with long-term use based on prioritized needs of the farm.
- UW-Extension could develop a pocket handbook with pronunciation guides containing dairy farm terms for employers and employees.
- UW-Extension could inform dairy producers of literacy services available.
- Dairy producers and others could inform Latinos that acquiring English skills will give them more opportunity for job advancement on the farm.
- Dairy producers could post signage in Spanish to promote better understanding of protocols to address the urgent need of understanding safety behaviors.
- Dairy producers could use a compiled list of available family and community resources to utilize with their workers if needed.

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