

Agritourism Safety in Virginia

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Abstract

Safety is a concern for agritourism venues because an operating farm may expose visitors to many unfamiliar conditions, situations, and/or animals, which opens the farm operation to potential liability risks during these interactions. The purpose of this research was to review current safety protocols on Virginia agritourism operations and seek information that was needed to improve for the future. Based on a survey sent to Virginia operators, numerous areas were identified which would benefit from further education and risk management information. Insurance offerings tailored to agritourism operations are needed, in addition to improved employee screening and training for operations management. The survey found that 25.24% of responses do not do any type of pre-employment screening while over 7% do not participate in walkthroughs before events. The purpose of this research was to document specific protocols already in place, identify, and describe critical areas of improvement for Virginia agritourism event, venue, and visitor safety practices.

Keywords: agritourism, agritourism safety, safety protocols

Table of Contents

Introduction..... 4

 Background and Setting 4

 Statement of the Problem 7

 Purpose of the Research Project..... 9

 Research Project Objectives..... 9

 Limitations of the Research Project 10

 Basic Assumptions 10

 Significance of the Research Project..... 11

Review of the Literature 11

 Health and Safety for Agricultural Children in the U.S. 11

An Emergent Virginia Industry 12

Theoretical Framework..... 14

Methodology 16

 Research Project Overview 16

 Participants, Respondents, and Sample..... 17

 Instrumentation..... 17

 Data Collection..... 19

 Data Analysis 19

Results and Discussion 19

Analysis and Synopsis 20

 Current Safety Protocols 20

 Future Safety Protocols & Suggestions..... 22

 Recommendations 24

Conclusion 26

Appendices..... 28

 Appendix A: List of Agritourism Activities 28

 Appendix B: Survey Questions 30

 Appendix C- Definition of Terms 47

 Appendix D- Theory of Planned Behavior 48

 Appendix E- Statement of Survey Consent..... 49

 Appendix F- Virginia Statute Agritourism Liability Sign 50

References..... 51

Introduction

Background and Setting

In the Commonwealth of Virginia, agriculture is both a historical and thriving industry. Fueling the success of agriculture in the Commonwealth is diversity of food, food products, and fiber production. With commodities ranging from aquaculture in the coastal plain to maple syrup in the valley, agriculture serves as Virginia's largest industry with an influence of \$70 billion dollars annually and provides around 334,000 jobs in the Commonwealth (Rephann, 2017). Virginia covers 8.1 million acres in farmland, which equates to 44,800 farms around the state (USDA State Agriculture Review, 2016). The Commonwealth's top three commodities include broilers or chickens (\$918 million), cattle and calves (\$714 million), and milk (\$478 million) with families or individuals owning 90% of these Virginia farms (USDA State Agriculture Review, 2016). Virginia's various farming operations allow the opportunity for several diverse and value added operations for producers. Virginia also offers an array of commodities through the Commonwealth that offer farm food and fun for everyone to enjoy all year long.

Agritourism is a combination of Virginia's top industries of agriculture and tourism. Agritourism provides numerous opportunities for visitors as well as agriculture producers. Agritourism is defined in the state of Virginia as "any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, or natural activities and attractions. An activity is an agritourism activity whether or not the participant paid to participate in the activity" in the Code of Virginia § 3.2-6400 (Virginia Decoded, 2008). A more modest definition, most people consider agritourism as

getting a true farm experience (Walker, 2009). Agritourism offers visitors the chance to participate in farm activities while learning about the farm. While offering visitors a learning opportunity, this also opens a new source of income for agritourism producers.

Agritourism provides the public with opportunities to come visit and join in the farm lifestyle through pick your own operations, bed and breakfasts, horseback riding, corn mazes, mud runs, and much more (Appendix A). Allowing families to experience outdoor activities and escape from everyday life is becoming a larger trend. According to the Virginia Agritourism Industry Economic Impact Report, there are 1,400 establishments in Virginia that identify as agritourism operations with 56% of them being open to the public year round (Magnini, Calvert, & Walker, 2017). Agritourism has grown in popularity and is responsible for an increase in profit on the farms (Lucha, Ferreira, Walker, & Groover, 2014). With this popularity growth, tourism around the state with receipts from agritourism operations have been increasing from 2002 to 2007 with an increase from \$4,396 to \$27,119 (Lucha, Ferreira, Walker, & Groover, 2014). There are three top motivations for Virginia farms to operate an agritourism sector on their farm and they are to; generate additional income, market farm products, and to share a lifestyle or way of living with others (Magnini, Calvert, & Walker, 2017). Mid-size farm (a farm with revenue between \$2,500-\$500,000) revenue has been declining and agritourism has been a place of interest for those farms as it offers alternative revenue options (Lucha et al., 2014). The 2014 study surveyed 470 producers and found that 42% said that agritourism contributed between 76-100% of the total farm income (Lucha et al., 2014). In 2013, visitors spent \$31-\$40 dollars on farm activities per visit (Lucha et al., 2014). Of the 470 producers that were surveyed in 2014, half of them responded to being somewhat profitable and 10% said they were very profitable (Lucha et al., 2014). In the 2017 economic impact study, Virginia agritourism was

responsible for roughly \$839.1 million dollars in wage and salary income in 2015 (Magnini, Calvert, & Walker, 2017). The economic activity provided from Virginia agritourism operations in 2015 reached \$134.7 million dollars (Magnini, Calvert, & Walker, 2017). Agritourism appears to be a viable and profitable approach for farmers to have an alternative income from the farm and is on the rise in Virginia.

Virginia has several partners that support agritourism such as Virginia Tourism Corporation (VTC), Virginia Department of Agriculture and Consumer Sciences (VDACS), and Virginia Cooperative Extension (VCE) (Walker, 2009). These partners encourage and help producers with issues or problems that arise on agritourism operations. A program team was developed through Virginia Cooperative Extension (VCE) to focus on agritourism development and outreach education for the state. VCE, Virginia Fairs, VDACS, VTC, and several other sponsors have invested time and resources into educational outreach to agritourism producers by hosting regional workshops and the annual Virginia Agritourism Conference. This conference provides producers with numerous educational sessions and tours of agritourism operations. This conference moves around the state to highlight local agritourism efforts and helps broaden ideas to those in attendance. Along with these efforts, VDACS expanded its marketing team to incorporate several avenues to help promote agritourism operations and local foods. Avenues include Virginia Grown, Virginia's Finest, and supporting local associations with print material like the Virginia Christmas Tree Association. These Virginia partners are essential to the education and outreach of Virginia's agritourism producers and supporting the agritourism industries growth.

Statement of the Problem

From the findings of the economic study, six factors were found that attract people to agritourism farms; bonding with family or friends, educational/experiencing something new, enjoying the outdoors, fun/entertainment, live close by/passing through/visiting family or friends in the area, and purchasing food, beer, cider, and /or wine (Magnini, Calvert, & Walker, 2017). As agritourism grows and attracts more children, safety can have a major impact on the success of the operation. “There are several challenges that come with agritourism operations and these can be the cost and access of insurance and liability coverage, weather unpredictability, the seasonal nature of the operation, health code regulations and inspections, and customer service” (Walker, 2009). With the growing number of individuals visiting the operation, safety is a concern for agritourism operations.

A large area of concern is safety for visitors and youth on agritourism operations. Most agritourism farms have some type of educational component to their operation and many schools bring field trips to these farms. For this reason, child safety on the farm is noteworthy. According to the National Children’s Center for Rural and Agricultural Health and Safety, over 30,000 children visit farms and ranches each year nationally (Marshfield Clinic Research Institute, 2017). The National Children’s Center for Rural and Agricultural Health and Safety has created several resources to help agritourism farms prepare for children and adults to visit (Marshfield Clinic Research Institute, 2017). These resources include signs, checklists, walkthrough information, insurance guidelines, and several ready to print items for producers (Marshfield Clinic Research Institute, 2017). With the large numbers of visitors on agritourism operations annually, safety protocols are a necessity to ensure everyone has an enjoyable and safe time.

Liability planning for agritourism operators is critical for a successful and safe operation. “An owner or tenant is liable for physical harm caused to his invitees by a condition on the land if (1) they know or should discover the danger and should realize that it involves an unreasonable risk of harm; (2) they should expect that the invitee will not discover or realize the danger, or will fail to protect themselves against it; and, (3) they fail to exercise reasonable care to protect the invitee against the danger”-Restatement (Second) of Torts § 343 (Richardson, 2012). “According to the Managing Liability booklet, steps should be taken to warn customers about a potential safety hazard or risk and it is their due diligence to make the property safe for visitors (Richardson, 2012).” Anyone that invites visitors to their agritourism operation for business is open for potential liability to those visitors (Richardson, 2012). The operator must take steps to make sure the agritourism operation is safe for visitors and that visitors are warned about any potential hazards.

Agritourism operations are at risk with the increased exposure of visitors, requiring the farm to be more aware of safety hazards and potential safety issues. With exposure, there is a need to increase diligence around farm safety. Safety is a large concern when agritourism operations have visitors coming onto the operation with youth present. There have been numerous concerns throughout the United States of children going missing on farms, families getting lost in corn mazes and calling 911, visitors getting hurt at the farm or sick after their visits, and some legal lawsuits throughout the United States according to the Marshfield Clinic Ag Injury News Clippings (Marshfield Clinic Research Institute, 2017). Nationally, over 23 million youth visited farms in 2014 and of those, 3,735 visiting youth were injured on farms in 2014 (NIOSH, 2016). Looking into agritourism safety would help Virginia operations prepare and hopefully prevent safety accidents.

Purpose of the Research Project

The purpose of this research was to examine current safety protocols on the agritourism operation for visitors. There continues to be numerous areas of safety concern around agritourism operations with the first being producer safety; such as what type of activity is on the operation and what type of safety protocol is set in place on the farm. The second is visitor safety; what is in place for visitor safety on the farm such as signs or waivers. The third is employee safety; how the farm is training and keeping the employees safe. Another area of concern is product safety; safety for products coming off the farm. The last area of interest is in first responder safety to the farm; does the farm and first responders have an emergency plan in place or how would they address an emergency situation? The question guiding this research is: *What types of safety protocols are in place for visitors, how are they managed on Virginia agritourism operations, and how could they be improved for future operations?* Because of this study, producers will have helpful information to improve their current and future safety measures.

Research Project Objectives

The objective of this research was to survey agritourism producers around the commonwealth through an online listserv. The survey was delivered through Qualtrics an online survey tool utilized by Virginia Cooperative Extension and Virginia Tech. This was used to survey agritourism operations and it allowed us to design different questions. Questions could be created with multiple choice, open ended, or choose as many that apply answer options. The research survey contained thirty questions and took five to ten minutes for each participant to complete. The participants were asked what type of agritourism operation they operate, any current safety protocols in practice, any existing protocols in place, and general agritourism

questions. From these questions, an understanding of current safety protocols in place on agritourism operations in Virginia was obtained.

Limitations of the Research Project

There were several limitations to this project. The first limitation was managing the survey and ensuring it reached the correct sample population. This survey was intended to reach agritourism operators that have their own agritourism operation in Virginia. Ideally, the survey would take no more than 10 minutes and approximately 30 questions in the instrument. The second limitation to this project was making sure a large group of Virginia producers were surveyed by electronic mail. Other areas of concern were access to the survey, because a large portion of the population is still without internet at their operation. Some producers do not use email, so reaching them by personal contact may be difficult to do. The third limitation of concern was the actual response rate to the survey, because with an online survey there is a high attribution and low reliability. Finally, with a recent agritourism economic study released in 2017, response rate to another agritourism survey was a great deal of concern for limitations.

Basic Assumptions

It was assumed that we may get similar answers from survey respondents, however, it was expected that variation may result due to different levels of agritourism producer's expertise. Some answers would be from producers that have been running an operation for years and others may be just starting in this industry. Assuming that a majority of the responders will have some type of safety protocol in place on the farm, while others have no idea about safety or liability concerns is another major assumption. Discrepancy in understanding the safety protocols on the farm are also assumed. The majority of farms are expected to have liability insurance and follow

a safety protocol for their insurance but the extent of those are expected to vary depending on participant answers. These were the basic assumptions for the survey population.

Significance of the Research Project

Agritourism safety impacts the agritourism producers and the individuals visiting their farm. Agritourism producers are taking on several areas of liability when they invite people on their farm. For example, “if you conduct a hayride and an accident happens, the landowner and/or operator may be liable” (Richardson, 2012). The importance of safety on the farm helps to limit the risk of illnesses and injury to visitors (Humann, Ellis, and Lee, 2011). This is a risky position that needs to be considered when producers are exploring if agritourism is the right avenue for their farm to embark on. Safety and liability are large and important factors when incorporating these types of activities.

Review of the Literature

Health and Safety for Agricultural Children in the U.S.

Almost thirty million children visit farming/agritourism operations on field trips or with families every year (Marshfield Clinic Research Institute, 2017). In 2006, there were more than 23,000 injuries to children who lived, worked, or visited a farm operation (Humann, et al., 2011). In 2014-2015, an estimated 11,942 injuries were reported from on farm incidents (NIOSH, 2016). More than a hundred children die annually due to agriculture related injuries (Humann, et al., 2011). Nearly 3,735 visiting youth were injured on farms in 2014 (NIOSH, 2016). From the figures mentioned above, safety on the farm is a tangible growing issue that needs to be addressed.

With every agritourism operation being unique, it is important to evaluate health and safety concerns for all ages (Humann, et al., 2011). It is crucial to talk to children and adults

about safety, have proper signage, and avoid hazards for visitors (Humann, et al., 2011). The National Children's Center for Rural and Agricultural Health and Safety (NIOSH) currently has two guides to help evaluate preparedness for guests; 1. Policies and Procedures Guide and 2. The Worksite Guide (Humann, et al., 2011). Children have different development stages as they age, so it is important to keep those in mind when planning school field trips or activities for younger children (Humann, et al., 2011). Due to safety concerns, producers are encouraged to conduct a walkthrough before each event to ensure the operation is safe (Humann, et al., 2011). With visitors coming on the farm, there will be car and foot traffic. Because of the heavy foot traffic, it is important that signage is utilized and readable by both adults and children. If something needs to be locked and out of reach of children, then it is the responsibility of the operator to do so (Humann, et al., 2011). It is also important to have proper fencing and adequate shelter for equipment to help reduce the chances of injuries (Humann, et al., 2011).

In an emergency, it is always important to have a plan. As an agritourism operator, there needs to be an emergency plan for everything including injury, fire, or sickness (Humann, et al., 2011). Personal care is also important on an agritourism operation and can be prevented through providing handwashing stations and restrooms. No matter the type of agritourism operation, safety should always be a concern for the operator and safety protocols will differ from farm to farm due to the diversity.

An Emergent Virginia Industry

The 2007 U.S. Census of Agritourism found 10,249 Virginia farms with agritourism related activities were grossing \$546 million and in 2012, the census found 13,334 farms grossing \$674 million (USDA Ag Census, 2007). "Virginia agritourism is growing as fast as the pumpkins people pick during fall outings" (Dixon, 2016). As the Virginia is for Lovers webpage

displays, “from the soil to the supper table, Virginia’s heirloom cuisine is connecting communities and making its mark” (Agritourism, 2017). Agritourism involves inviting people to your farm, and this can be risky according to Scott Denoon at Virginia Farm Bureau (Denoon, 2016). Along with this risk, these operators need special insurance, which is expensive but is needed to ensure a safe operation (Dixon, 2016). “Agritourism activities have become popular additions to farm businesses by addition of corn mazes, hayrides, weddings, and festivals” (Dixon, 2016). According to Denoon at Virginia Farm Bureau, the general insurance policy will not cover these events and a separate liability policy must be written” (Denoon, 2016). Denoon also stressed the importance of making sure all the activities on the operation are covered in the farms insurance policy (Dixon, 2016).

The Virginia Agritourism Liability Statute provides agritourism producers with limited liability protection for their operation, but having the agritourism liability sign posted is also needed (Dixon, 2016). It is also important to place this sign in several locations at your farm to ensure visitors will see and comprehend the signage. This sign specifies dynamics in the statute and by posting these signs; this provides the operators with limited liability protection (Dixon, 2016). According to Scott Denoon, “this liability is dismissed if the operator does the following: commits an act or omission that constitutes negligence or willful disregard for the safety of the participant, and the act or omission caused injury, damage or death to the participant, has knowledge or reasonably should have known of a dangerous condition of the land, in the facilities, or with the equipment or animals used in the activity and does not make that danger known to the participant and that danger causes injury, damage or death to the participant, or intentionally injures the participant” (Dixon, 2016). It is the producers due

diligence to make sure the operation is safe and operational to ensure visitors or workers do not get hurt on the operation.

In a study conducted by Virginia Tech faculty in 2014, 500 farms were invested in agritourism (Lucha, Walker, Ferreira, and Groover 2014). The largest concern then was location and the actual foot traffic on the farm (Lucha et al., 2014). Other important factors mentioned were labor sources (Lucha et al., 2014). According to this study and Gustavo Ferreira, agritourism is best suited for mid-sized farms and could help them from being developed for non-agriculture purposes (Lucha et al., 2014). “Larger operations benefit from economies of scale, small ones from that niche factor, the mid-size get special value from direct contact with the public which amounts to a kind of direct marketing for them” (Lucha et al., 2014). Several different marketing methods were mentioned in the article but pick your own operations stood out as the most flexible with social media marketing supporting their benefits (Lucha et al., 2014).

Theoretical Framework

“The Theory of Planned Behavior is meant to demonstrate general attitudes and personality traits that are implicated in human behavior, but their influence can be discerned only by looking at broad, aggregated, valid samples of behavior“ (Ajzen, 1991). This theory is intended to foresee and explain human behavior in certain situations or events (Ajzen, 1991). With this being said, a person’s intention or want to do something is tested by this theory. Intentions include motivational factors that would influence a behavior (Ajzen, 1991). This could include how far someone would be willing to go to achieve a goal or objective.

The theory used in this research was the Theory of Planned Behavior. This is a theory that is used to understand, predicting, and changing human social behavior (Lange, Kruglanski,

& Higgins, 2012). “The theory looks at intention as the immediate antecedent of behavior and is itself a function of attitude toward the behavior, subjective norm, and perceived behavioral control, and these determinants follow, respectively from beliefs about the behavior’s likely consequences about normative expectations of important others, and about the presence of factors that control behavioral performance” (Lange, et al., 2012). This theory has been proven by several studies and shows the understanding of human social behavior better. This theory is assumed to hold multiple behavioral beliefs each of which links performance of a behavior to a different outcome (Lange, et al., 2012).

The Theory of Planned Behavior consists of several different parts that are interconnected as shown in Appendix D (Ajzen, 1991). When looking at the behavior, intention is looked at including the attitude toward the behavior, the subjective norm, and perceived behavioral control. When looking at this model and the intention is stronger, this leads to a stronger performance (Ajzen, 1991). Together, these areas represent a person’s control over the behavior of a certain situation or event (Ajzen, 1991). When looking at behavioral achievement, this looks at both intention and behavioral control. In simpler terms, looking at behavioral achievement is looking at how far someone is willing to go to achieve something and how high are his or her intentions in doing so.

When looking into agritourism safety in Virginia, the Theory of Planned Behavior was looked into with participants taking the survey. Behavior related to safety protocols on the farm was analyzed and the intention to keep participants safe was analyzed with a set of questions asked of operators and producers. The survey helped analyze the attitude towards participant safety on the farm and look into normal procedures related to safety on the farm. This behavior of agritourism producers was looked at in detail to see the attitude toward the behavior on farm

safety, look at perceived behavior of farm safety, and look at the actual behavior of agritourism producers. By surveying operators and producers, the perceived behavior control was established. From this, an understanding of planned behavior towards Virginia agritourism will be proven.

Methodology

Research Project Overview

This research study was based on a survey that was distributed to gather information on agritourism safety in Virginia, specifically looking at safety protocols that were in place on Virginia agritourism farms. This research remains important for Virginia agritourism producers because agritourism is on steady incline around the Commonwealth. Farm safety stands as a rising concern as children frequent the farm more and more every year with field trips. With this data, the areas that need more education and effort were identified and will be addressed through a publication in the future. These areas were highlighted in the publication and will be available to the public once it is released. This publication will educate producers and potential producers that want to explore agritourism on visitor safety. Agritourism safety is a large concern when the general public is visiting farms and it needs to be addressed in hopes of keeping visitors safe and focused on having fun on the farm. Several variables are important to make the agritourism operation safe and operational and with this research and publication, Virginia will have the educational tools to help keep visitors safe on the agritourism operation.

To achieve the research goal, a survey of existing agritourism operations focused on learning more about agritourism safety in Virginia. This survey was focused on current practices on agritourism operations regarding the safety for visitors and farm workers. A publication to help agritourism producers understand and recognize farm safety and to help Virginia

agritourism visitors have a safe and enjoyable time at Virginia agritourism operations will be developed as a result of these survey findings. Recommendations are suggested for agritourism operators to improve or increase safety awareness on the farm. Survey questions were asked to document current safety procedures on the farm and how they are implemented. Respondents were asked about how employees are hired, how the operation is run, and how some troublesome events are handled at the operation. Survey questions included multiple choice answers where the producer can choose multiple answers based on their operation. This survey was distributed electronically through Qualtrics to an updated list-serve of agritourism producers in Virginia.

Participants, Respondents, and Sample

This project targeted the Commonwealth of Virginia agritourism farm operators. The producers ranged in age from at least eighteen years of age and older per Institutional Review Board (IRB) regulations for content. The target audience was Virginia agritourism producers who are currently running farms that participate in agritourism activities. The sampling strategy was a non-probability method of sampling in the form of volunteer surveying (Brewster, 2017). With volunteer sampling, the experimental unit may self-select to be included in the survey or not. This survey was distributed via email to the Virginia agritourism listserv with 789 people on that list as well as through Virginia Cooperative Extension listservs, in hopes to reach clientele throughout the state. These are professionally run listservs run by Virginia Cooperative Extension agents and will reach our sampling population. Errors in the sampling were minimized with use of clear and understandable questions in the survey.

Instrumentation

This survey was comprised of questions and each participant received the same questions. Questions were designed to encourage respondents to provide honest answers from

the participants to provide accurate data. Questions were based on Virginia's agritourism legislation guidelines, agritourism check sheet guidelines, and general farm safety knowledge. The majority of questions had multiple answers that the participant could choose multiple answers while one question offered an open-ended response. The open-ended question asked the producer to explain any safety issue they had on their farm in detail. This question was chosen to be an open-ended question in hopes producers would give examples or details in issues that had possibly been overlooked. These questions were used to establish where Virginia agritourism producers stand in their current safety procedures. From there, the research will be published along with an extension publication on guidelines for agritourism safety on the farm.

The instrument was delivered using the Dillman Total Design Method (TDM) (Dillman, Smyth, and Christian, 2009). This was a method created in the early 1970's by Don Dillman as a tool to design mail and telephone surveys (Dillman, 2014). "It was proposed that the likelihood of obtaining questionnaire answers was greatest if the survey designer simultaneously focused on reducing costs, increasing benefits, and engendering trust that the expected benefits of responding would outweigh the costs of responding" (Dillman, 2014). This theory was created as an expansion of the social change theory to help explain why individuals are motivated to engage in certain social behaviors and not others (Dillman, 2014). The TDM method helps to establish questions that the surveyor will view as useful, helpful to others, and easy to answer (Dillman, 2014). As time goes by, some changes have been made to the TDM method and it was renamed as the Tailored Design Method instead of the Total Design Method because the focus had slightly shifted (Dillman, 2014).

Data Collection

Data collection took place using Qualtrics after IRB approval. The survey was distributed through existing internet list serves provided by Virginia Cooperative Extension personnel. The participants were anonymous throughout the process and only general demographic questions were asked of each participant. All participation was voluntary to the research survey.

Data Analysis

The Virginia agritourism safety research survey was created and distributed in Qualtrics. The survey was distributed to the Virginia agritourism listserv and through the Virginia agricultural agents listserv. Potential participants were sent the invitation to participate three times. The Virginia agritourism listserv had an impact potential of 789 people that range from producers, government employees, extension agents, and several people interested in agritourism. With that, a total of 88 Virginia agritourism producers responded to the survey.

Results and Discussion

The question guiding this research was: *What types of safety protocols are in place for visitors, how are they managed on Virginia agritourism operations, and how could they be improved for future operations?* The first objective of this research was to survey agritourism producers around the Commonwealth about their current safety practices. The second objective of this research study was to give Virginia agritourism operators the opportunity to provide self-reporting information about how their safety protocols are carried out on their operations, look at current safety protocols that are in place in Virginia, and what education or future research is needed to make Virginia agritourism operations safe and enjoyable.

Analysis and Synopsis

Several important aspects of Virginia agritourism operations were highlighted from survey results; including hiring and training farm employees, educating farm visitors, insurance purchasing practices, and use of appropriate signage. Within these specific areas, current safety protocols were reviewed and results are shared in three parts to clarify findings on safety protocols in place on Virginia operation's and suggestions for improvement on safety protocols on Virginia's operations.

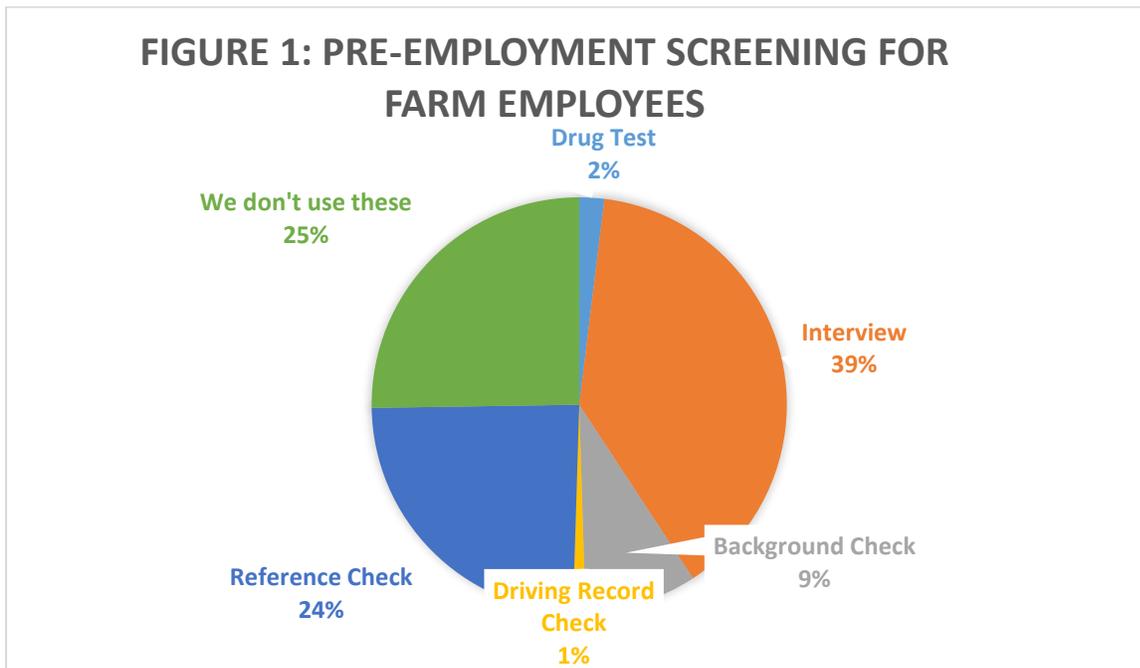
Current Safety Protocols

Farm Employees

Employee training is a critical aspect needed to ensure a successful and safe operation for visiting tourists. A majority of agritourism operators train employees through verbal training completed by a manager or owner (24.5%) while others train alongside a staff member (21.9%). Other employee training methods include training models (5.2%), safety training (15.1%), tractor driving lessons (9.4%), and handling guests (customer relations) (15.1%). Of these farm employees, the majority of Virginia agritourism farm employees are family members (27.3%) or seasonal labor (26.6%). Some operations have immigrant labor (8.4%), volunteers (15.6%), and some hire high school or college employees (22.1%). Communication with farm employees is also important at any event during an emergency, or when handling everyday tasks. Of the responses, 34.6% reporting communicating with employees through cell phones, 31.8% said they communicate at the beginning and end of each day, 21.5% communicate with hand held talkies, and 9.4% do not have a communication method in place. The survey also asked what type of

pre-employment screening employees must undergo before being hired and are shown in Figure 1.

Figure 1: Pre-Employment Screening for Farm Employees. This figure represents what agritourism employees undergo before employment. This is important to highlight because this shows what agritourism operators are doing to help ensure farm employees are responsible and able to keep visitors safe during their visit.



Farm Visitors

Agritourism operations host numerous visitors throughout the year from all ages. Having a safe venue is important to ensure those visitors have an enjoyable time and come back again. We asked about several different aspects for farm visitors including sanitary stations and emergency plans. Sanitary stations are important to note because if there is a petting zoo and visitors are eating after the petting zoo, they will need some way to wash their hands from a food safety aspect and help minimize biosecurity threats. Emergency plans are necessary on

agritourism operations because the operators will need an emergency plan in place to ensure that the situation is handled in a timely manner.

The survey asked about different types of sanitary stations that are provided and most operations have bathrooms and sinks in a permanent structure (42.9%) while others utilize hand sanitizer (29.5%). Some use mobile porta johns (25.9%) and 1.8% do not offer sanitary stations. Along with the venue, it is always important to have an emergency plan in an emergency. Of the Virginia agritourism operators questioned, 42.9% said they would call 911 immediately in an emergency while 29.9% said they would call the manager and farm owner to access the situation. Some said they would meet at a central location and then go from there (16.8%) while 10.1% said they do not have a plan in place for emergencies.

Future Safety Protocols & Suggestions

What types of safety protocols are in place for visitors, how are they managed on Virginia agritourism operations, and how could they be improved for future operations?

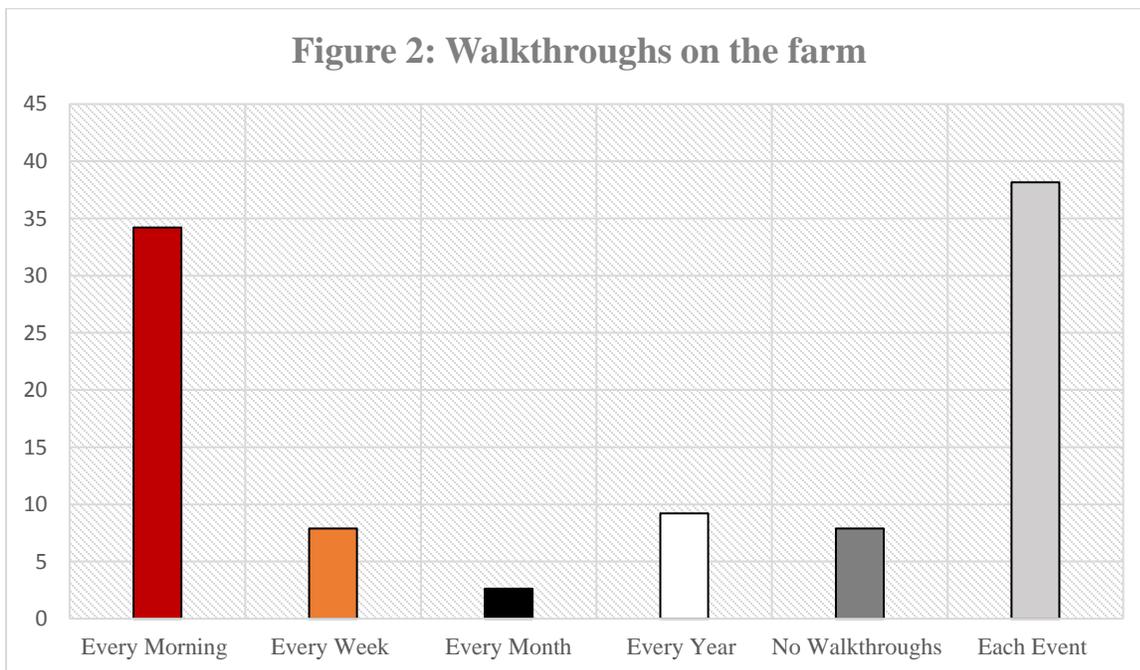
Insurance

Insurance is an important risk management tool available to agritourism operators. While agritourism operations are relatively new insurance policies, there are still steps that can be taken to protect farm operators and visitors on the farm. Of the agritourism operators that completed the survey, 82.5% reported they had agritourism insurance coverage while 12.7% reporting having insurance but without coverage for the agritourism operation. About five percent reported they were unaware of the need for additional coverage. Respondents were asked about frequency of walkthroughs completed on the property during an agritourism event.

Walkthroughs are simply a tool operators can practice in hopes to find and address any hazardous or broken things on the operation before opening to the public. In Figure 2, the

reported times for walkthroughs are shown. The majority of operators (98.3%) noted that if an issue was found during a walkthrough, it was addressed and fixed as soon as possible. During the walkthroughs, 31.7% of operators said that their insurance agent participated in the walkthrough. Only 6.7% reported that their insurance agent participates in the walkthrough before every major event while 61.7% reported that their insurance agent never participates in the walkthrough. Agritourism events tended to be seasonal and 31.2% reported they notified their insurance agents once a year with changes in their operations, while 16.4% notified them before each major event. Furthermore, 11.5% notified them before each season they were open and 40.9% reported that they only communicated with their insurance agents when they had to discuss a problem or renewing their insurance policy.

Figure 2: Walkthroughs on the farm. This figure shows how many agritourism producers do a walkthrough on their farm and how often they are completed on the operation. This is important to display because this shows what agritourism operators are doing prior to events and the frequency of walkthroughs to ensure safety for the visitors.



Signage

Virginia has an agritourism liability warning sign that is available for producers in the Commonwealth. Seventy eight percent of responses had this sign posted in 1-5 areas on their farm. Six percent had this sign posted in 5-10 areas on the farm. Fourteen percent of respondents do not have the sign posted. From these responses, 48% had this sign posted at the entrance of their operation while 20% had it posted at the parking area. Just 28% had signage posted for participants to read in the agritourism activity area while 3% had it posted near the restroom areas. Language is also an important factor to consider when posting signs because visitors may speak many languages that are visiting. Seventy nine percent of responses had signs posted in English with an additional four percent posted in Spanish. Fourteen percent reported they did not have signs while one percent reported they have other signs such as no entrance or wash your hands before eating for example. Of these, 18.6% reported having signs with both pictures and words, 15% reported not having signs while 66% reported only signs that were written in words.

Recommendations

Agritourism safety is an important issue in Virginia. From the response rates, it appears that many operators are practicing safety precautions to help keep their operation safe, while others could improve in their safety methods. Fourteen percent of participants reported they did not have the Virginia Liability sign present at their farm due to not knowing about the sign or simply not posting it yet. This is something that should be present on all agritourism operations and visible in several areas because Virginia provides the signs free of charge to all agritourism operations and represents a minimal time of investment by the operator while providing needed information to visitors. Along with this, seven percent reported that they did not participate in walkthroughs on their farm and this is something that every agritourism operator should do to

help keep visitors safe. Regularly scheduled walkthroughs with documented problem identifications and repairs present an opportunity for operators to address a problem immediately. Along with general safety on the farm operation, having reliable employees is vital to a successful operation. Respondents revealed that over 25% of employers did not do any pre-screening before hiring employees. Pre-screening employees would benefit agritourism operations in helping make the operations as safe as possible because you would have employees that were screened and trained working on your operation. By pre-screening employees, you are helping to keep your operation and visitors safe because you will find employees that want to be there and believe in your mission. These areas of interest are important and can be improved upon in the future to help minimize risk exposure and potential for negative impacts on farm operations.

Safety is always at the forefront of concern for producers and insurance is a key part of helping protect operations and the families visiting. Walkthroughs conducted by the managers, employees, and insurance agents on a regular basis are strongly recommended. With agritourism being a fairly new and growing industry, education is important to help keep agritourism operators up to date with the latest information and tips. There have been great strides to ensure education is available, but there is potential for continued safety education opportunities. Each county tourism office or economic development office is encouraged to offer workshops or information sessions for agritourism operators and employees in their region. With completion of this workshop or course, localities could provide a certification or a seal of completion that the producers could display at their operations. This initiative would show visitors that the operator is doing everything in their power to make their operation safe and enjoyable. These would help identify local regulations and provide them to the local producers that are interested.

Conclusion

Agriculture is not only thriving, but also growing throughout the Commonwealth, and agritourism operations represent an attractive offering to members of the public. Agritourism safety should be considered from the entrance to the exit of every operation to ensure all visitors are safe during their visit. These operations have numerous areas of safety concern regarding food safety, livestock, machinery, or general personal safety. As Virginia's tourism continues to grow, safety is at the forefront of concern for this industry. Children and adults enjoy their trips to agritourism operations and do not want to be confronted with concerns of safety while experiencing the farm lifestyle. When the farm is open to visitors, it requires a lot of attention before the general public should come to visit. Parking, bathrooms, hand washing stations, signage, employee backgrounding and training, and emergency plans are just some of the areas that need to be addressed when considering agritourism for your farm operation. Therefore, this was a meaningful topic to study and help address safety concerns to producers in Virginia to help eliminate or prevent harmful issues from happening on agritourism operations.

This research project explored agritourism operator behaviors related to safety protocols on the farm and related intentions to keep participants safe was analyzed with a survey questionnaire. The survey data was used to analyze the attitude towards participant safety on the farm and look into normal procedures related to safety on the farm. The Theory of Planned Behavior was applied to survey data from Virginia agritourism operators and overall public safety protocol and behaviors related to managing additional risks posed by agritourism venues was reviewed. With the results from the survey, agritourism operators appear to have adopted many risk management tools aimed to make farms safer for visitors with employee pre-screening, signage, and walkthroughs. Continued educational efforts aimed at those operators

who are unaware or have limited access to these risk management tools needed to ensure visitor safety are recommended. In conclusion, from the research, there will be an extension publication on suggested guidelines for agritourism safety in Virginia published in the future.



Appendices

Appendix A: List of Agritourism Activities

Potential Agritourism Activities (Walker, 2009)

Agricultural museum and displays
 Archery
 Barn dances
 Bed and breakfast accommodations
 Biking trails
 Bird watching
 Birthday parties
 Breweries
 Cabin living
 Campfires (don't forget the marshmallows)
 Camping
 Canning produce
 Canoeing
 Corn mazes
 Corporate and group events
 Cut flowers (picking, arranging, and planting)
 Cut-your-own Christmas tree and evergreens
 Farm cooking contests
 Farm scavenger hunts
 Farm stores and markets
 Farm vacations (a day or a week on the farm: living, working, enjoying)
 Fee-fishing pond (fishing, cleaning, and cooking)
 Flower arranging workshops
 Haunted barns
 Hay wagon rides
 Heirloom plant and animal exhibits
 Herb walks
 Heritage trails
 Hiking paths (walking, identifying vegetation, determining a tree's age, picnicking)
 Historic reenactments
 "How-to" clinics
 Hunting
 Ice cream parlor or bakery
 Jam- and jelly-making demonstrations
 Meeting barnyard animals (participating in educational programs focusing on each animal: shear the sheep, milk the "demonstration" cow, or participate in "cattle college")
 Music events (banjo and guitar lessons), concerts, and festivals. (Refer to *Preparing for an Agritourism Event: A Checklist*, Virginia Cooperative Extension publication 448-501; www.pubs.ext.vt.edu/448/448-501/448-501.html)
 Orchards and pick-your-own (picking, sitting, picnics under the trees)

Pancake breakfasts
Plant a garden
Pony and horseback riding
Pumpkin patch (picking, painting, carving, and buying)
Quilting/weaving exhibitions
Restaurants/dining (farm food, slow dining, Sunday brunches, or local foods)
Snow sledding
Sorghum milling
Stargazing and moonlight activities
Storytelling/story swaps
Straw bale maze
Tours for children and families
Vegetable contests
Virginia Standards of Learning and the farm
Weddings
Winemaking and tasting
Wineries

Appendix B: Survey Questions

<https://vce.az1.qualtrics.com/ControlPanel/>

Agritourism Safety

Start of Block: Your Agritourism Operation

Your agritourism operation

What type of agritourism operation do you operate in Virginia? (Choose all that apply)

- Tour/Field trip (1)
- Festival/Event (2)
- Wedding/reunion/social gathering/concert (3)
- Retail goods purchased on the farm (4)
- Beer, cider, spirits, or wine tasting (5)
- Educational Workshop (6)
- Produce, meat, dairy, or honey purchased on the farm (7)
- Animal observation/petting (8)
- On-farm lodging or camping (9)
- Hayride (10)
- Food tasting (11)
- Farm Events immersion experience (12)
- U-pick vegetables or fruit (13)
- Art/painting experience (14)
- On-farm dining (15)
- Christmas tree farm/cut your own (16)
- On-farm stargazing (17)
- Pumpkin Patch (18)

- On-farm horseback riding (19)
 - On-farm hiking (20)
 - Cooking Class (21)
 - On- farm fishing (22)
 - Youth Camp (23)
 - Wildlife study (24)
 - Corn Maze (25)
 - Other (26) _____
-

Which seasons are you open to the public?

- All year (1)
 - Fall (2)
 - Summer (3)
 - Spring (4)
 - Winter (5)
-

How many days approximately are you open to the public each year?

Please enter how many days (1)

My age is:

18-35 (1)

35-50 (2)

50-70 (3)

70+ (4)

I prefer not to answer (5)

My farm is located in:

- Southwest Virginia/Blue Ridge Mountains (1)
 - Central Virginia (2)
 - Chesapeake Bay (3)
 - Coastal Virginia/Eastern Shore (4)
 - Coastal Virginia (5)
 - Southwest Virginia/Heart of Appalachia (6)
 - Northern Virginia (7)
 - Shenandoah Valley (8)
 - Southern Virginia (9)
 - Virginia Mountains (10)
-

Our agritourism operation has been in operation for:

- 1-5 years (1)
- 5-10 years (2)
- 10+ years (3)

End of Block: Your Agritourism Operation

Start of Block: Farm Employees

Farm employees

What type of employee training do you provide for your employees? Mark all that apply.

- Training modules (1)
 - Train with another staff member- Mentor/employee training (2)
 - Verbal training with manager or owner (3)
 - Safety Training (4)
 - Tractor Driving (5)
 - Handling Guests (6)
 - No training is provided (7)
-

What type(s) of labor do you hire on your farm?

- Seasonal (1)
 - Immigrant (2)
 - High School or College (3)
 - Volunteers (4)
 - Family Members (5)
-

What type(s) of pre-employment screening do your employees go through before employment?

Mark all that apply.

- Drug Test (1)
 - Interview (2)
 - Background Check (3)
 - Driving Record Check (4)
 - Reference Check (5)
 - We don't do these (6)
-

How do you communicate with employees when the operation is open or during events?

- Hand held talkies (1)
- Intercom (2)
- Cell Phone (3)
- We speak at the beginning and end of the day (4)
- We don't have a communication method in place (5)

End of Block: Farm Employees

Start of Block: Farm Visitors

Farm visitors

How many individuals visit your farm each year?

- 1-50 people (1)
 - 51-100 people (2)
 - 101-150 people (3)
 - 150+ people (4)
-

Annually, how many visitors have reported or have been treated for an injury (i.e. scrape, cut, fall, etc.) during their visit?

- 0-25 people (1)
 - 26-50 people (2)
 - 51-100 people (3)
 - 101+ people (4)
-

Of these visitors, how many children visit your farm each year?

- 0-50 children (1)
 - 51-100 children (2)
 - 101-150 children (3)
 - 150+ children (4)
-

What type of sanitary stations do you have at your location?

- Bathrooms and sinks in a permanent structure (1)
- Porta Johns and hand washing stations that can be relocated (2)
- Hand sanitizer (3)
- We don't offer these (4)

What type of emergency plan does your farm have in place in case of an emergency? (Fire, missing child, car accident, etc.) Mark all that apply.

- Meet at a central location to discuss situation and take action from there (1)
 - Call 911 immediately (2)
 - Call/Contact Farm Owner or Manager and go from there (3)
 - We do not have a plan in place (4)
-

Who knows the layout of your farm in case of an emergency? Mark all that apply.

- Local Fire Department (1)
 - Local Emergency Medical Services (2)
 - Local Police Department (3)
 - Insurance Agent (4)
 - All Employees (5)
 - All of the above (6)
-

Have you had a recorded safety issue on your farm? Ex. Lawsuit, broken bones, car accident, fall etc.

- Yes, 1-3 times (1)
 - Yes, 3-5 times (2)
 - Yes, 5-10 times (3)
 - Yes, more than 10 times (4)
 - No, we have never had a safety issue on the farm (5)
-

Could you explain any safety issue you have had on your farm?

- Click to write Choice 1 (1)
-

What type of safety protocol do you have in place on your operation? How is it set up? For example: If there is a fire, do you have a protocol in place? If so, could you explain?

- Click to write Choice 1 (1)

End of Block: Farm Visitors

Start of Block: Insurance

Insurance

Do you have additional insurance/liability insurance for your agritourism operation?

- I have a standard policy withOUT coverage for my agritourism operation (1)
 - I have agritourism coverage for my operation (2)
 - I didn't know I needed additional coverage (3)
-

Who is your insurance provider for your operation?

- Please list your insurance provider (1)
-

- I prefer not to answer (2)
-

Do you or your employees do a walkthrough of the property before each event? (choose all that apply)

- A walkthrough is done every morning (1)
- A walkthrough is done every week (2)
- A walkthrough is done every month (3)
- A walkthrough is done every year (4)
- We don't do walkthroughs (5)
- A walkthrough is done before each event (6)

If something is found in the walkthrough, how soon do you address/fix it?

- The issue is addressed ASAP (1)
 - The issue is fixed at a later date (2)
 - It is not fixed (3)
-

As a part of your walkthrough, how many times does your insurance agent come and participate in the walkthrough?

- Once a month (1)
 - Once a year (2)
 - Before every major event when asked to participate (3)
 - Never (4)
-

Do you notify your insurance agent before each major event or from year to year?

- We notify them before each major event (1)
 - We notify them once a year for changes (2)
 - We notify them before each season that we are open (3)
 - We don't really communicate unless we have to (4)
-

How do you keep records at your farm? Records include business/finance, visitor log, employee log, etc.

- Electronically (1)
- Paper (2)
- We don't keep records (3)

End of Block: Insurance

Start of Block: Signage

Signage

Where is the Agritourism Warning Liability sign posted at your farm/business?

Click to write Choice 1 (1)

How many places is it posted?

It is posted in 1-5 areas (1)

It is posted in 5-10 areas (2)

It is posted in 10+ areas (3)

I do not have it posted (4)

If it is posted, where is it located? (Check all that apply)

- Entrance (1)
 - Parking area (2)
 - Restroom area (3)
 - Activity area (4)
 - We do not have signs (5)
-

Do you have signage on your property in several different languages? (Choose all that apply)

- English (1)
 - Spanish (2)
 - French (3)
 - German (4)
 - Other (5) _____
 - We do not have signs (6)
-

Do you have areas properly marked with signage that both children and adults can understand?

Ex: poster with writing and then pictures for children that cannot read but can understand pictures

- Yes- signs are written with words and pictures (1)
- No- only written in words (2)
- We don't have signs (3)

End of Block: Signage

Appendix C- Definition of Terms

Agritourism: “Agritourism activity” means any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, or natural activities and attractions. An activity is an agritourism activity whether or not the participant paid to participate in the activity.”
<https://vacode.org/2016/3.2/V/64/3.2-6400/>

Agritourism professional: Is any person who is engaged in the business of providing one or more agritourism activities, whether or not for compensation.
<https://vacode.org/2016/3.2/V/64/3.2-6400/>

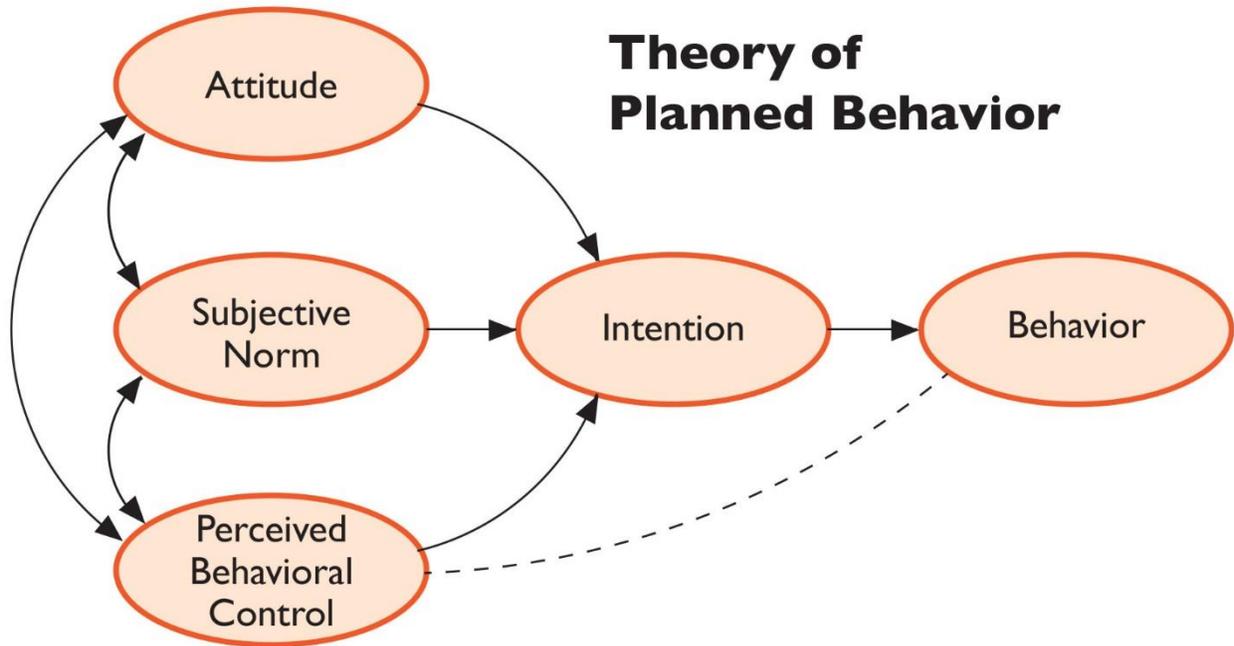
Safety Protocol: Safety Protocol is a plan of action that is made in advance in case of an emergency.

Pick Your Own: A pick your own operation is a farm where visitors are welcome to harvest their own product. For example: a strawberry patch where you harvest your own strawberries

Direct Marketing: Direct marketing is a form of advertising in which companies provide physical marketing materials to consumers to communicate information about a product or service. Direct marketing does not involve advertisements placed on the internet, on television or over the radio. Types of direct marketing materials include catalogs, mailers and fliers.
<http://www.investopedia.com/terms/d/direct-marketing.asp>

First Responders: These are the groups that respond to emergencies to help in emergencies. Examples: Police, EMT’s, and Fire Departments

Appendix D- Theory of Planned Behavior



Appendix E- Statement of Survey Consent

You are invited to participate in a survey on Agritourism Safety in Virginia research project at Virginia Tech.

The purpose of this study is to look at safety protocols on agritourism farms in Virginia to see how they are established and carried out on the farm. This knowledge will be used to help educate and inform agritourism producers and the public in Virginia about potential hazards and how to avoid them. The results will be shared via publications and programs, social media, and peer-reviewed articles.

Should you agree to participate, you will be asked to complete a survey that will take about 15 minutes to do. If you agree to participate, you can simply click the link below to complete the survey online. If you agree to participate but would rather complete a paper version of the survey, there is information to how to do so below, as well.

There are no significant risks or benefits associated with participation in this survey. Your participation is completely voluntary and your responses will be confidential.

This study is supported in part by Virginia Tech and Virginia Cooperative Extension.

If you have any questions about this survey, please contact researcher: Tiffany Drape at tdrape@vt.edu.

Should you have any questions or concerns about the study's conduct or your rights as a research subject, you may contact the VT IRB Chair, Dr. David M. Moore at moored@vt.edu

Appendix F- Virginia Statute Agritourism Liability Sign

"WARNING: Under Virginia law, there is no liability for an injury to or death of a participant in an agritourism activity conducted at this agritourism location if such injury or death results from the inherent risks of the agritourism activity. Inherent risks of agritourism activities include, among others, risks of injury inherent to land, equipment, and animals, as well as the potential for you to act in a negligent manner that may contribute to your injury or death. You are assuming the risk of participating in this agritourism activity."

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