

URI Small Acreage Livestock Education Program Needs Assessment Summary – August 2007

Introduction:

The University of Rhode Island Cooperative Extension (URI CE) Home*A*Syst and 4-H Programs, and the URI Department of Fisheries, Animal and Veterinary Science have been awarded a grant by the United States Department of Agriculture (USDA) to develop an education program that encourages the adoption of best management practices. This program will focus on the management of domestic livestock and other large animals such as horses. It will include proper management of animal manure, paddocks and pastures and relate how these practices benefit water resources and human and animal health.

We conducted a needs assessment of this target audience to identify gaps in knowledge and existing barriers that limit or prevent the adoption of BMPs to protect water resources. The needs assessment was also conducted to identify potential motivating factors of our target audience that would encourage them to adopt practices and change behaviors for water resource protection. We will apply the results of the needs assessment to develop a train-the-trainer adoption-outreach program that increases knowledge about the pollution risks associated with livestock activities on small acreage properties, adapts and transfers agricultural BMPs at a scale that is appropriate, and will increase the adoption of BMPs that protect water resources.

We utilized focus groups and mail surveys as the two evaluation tools to conduct the needs assessment. Details and key findings for both are summarized below.

Summary of focus group meetings conducted

3 focus group meetings were conducted with a total of 18 participants as follows:

- February 20, 2007 – Ponaganset High School (northern RI) – 3 participants attended from 4-H Program (3 females)
- February 27, 2007 – Richmond Grange (southern RI) – 11 participants attended from 4-H Program (7 females, 4 males)
- March 12, 2007 – Portsmouth Town Hall (eastern RI) – 4 participants attended. 3 from 4-H Program and 1 from another livestock organization. (3 females, 1 male)

URI Cooperative Extension Home*A*Syst Program staff: Holly Burdett, facilitator; Alyson McCann, note taker; Courtney Lipski – audio tape operator and time keeper. Judith Swift, URI Dept. of Communication Studies and Theater (grant participant), attended the March 12, 2007 focus group meeting as an observer.

Outreach for focus group participation was conducted with the Rhode Island 4-H Program, Rhode Island Raised Meats Cooperative, Rhode Island Sheep Cooperative, and the Santana Center - a non-profit organization that promotes equine education and outreach.

Summary of Key Findings – Focus Groups:

Participants: 83% of participants had multiple types of livestock/large animals including: beef cattle/cows, chickens (layers and exotics), horses, pigs, goats, sheep, rabbits, ducks, and turkeys, as well as noting small animals (dogs and cats).

Primary reasons for having livestock: Pleasure/companionship, love of farm life / heritage, and teaching children responsibility and values were among the top reasons. This was followed closely by recreation / hobby (pleasure riding, showing, competition), 4-H projects and activities for youth, and production of food, fiber and other products.

Care of animals: Ranges from 4 – 40 hours per week depending on time of year / need for specialized care. Average daily chores ranged between 10 – 20 hours per week. For the majority of participants, care is split between the adults and youth throughout the course of a week. Cost, time/responsibility for care, need/purpose (depends on type of animal in question), and space/land were all dominant influences on determining the number of animals to have. Need or purpose often includes raising enough animals to provide youth club members with projects.

Sources of information: The majority of participants turn most for advice and information to experienced, “professional” farmers and other long-time animal owners (for many participants, this was an older family member), followed by veterinarians and other animal professionals (such as farriers). Participants also turn to books that are easy to read and understand, magazines, the internet, RI 4-H Program and seminars conducted by UCONN.

Participants’ perceived degree of knowledgeable about managing manure.

- About 40% of participants felt knowledgeable, about 20% felt somewhat knowledgeable (yes and no, still in learning process) and the remaining 40% did not feel knowledgeable.
- Those with knowledge attribute it to life experience, being taught by parents or older, experienced animal owners (“this is the way it has always been done”), common sense, seeing other well-managed farms, through reading and research, the internet, RI 4-H experience, and UCONN seminars.
- Some participants indicated that concerned neighbors resulted in visits, inspections or other interaction with state regulatory agencies and/or other town / state officials – this has contributed to why they feel knowledgeable about managing manure.

Participants’ desire to make changes in managing manure and factors that affect the ability to make changes.

- 89% of participants would like to make changes. Reasons include making better use of manure as a resource – compost it, better recycle it on-farm; make manure more valuable for others to take away; to be more time and cost efficient; make it less labor intensive and more convenient; environmental and water quality protection issues, protect/improve animal health, improve appearance, reduce odor and flies.
- Lack of time, money, equipment, space/land, knowledge and someone to haul the manure away are the biggest barriers to making improvements.

- Discussion included the need for better understanding of local and state regulations, as well as consistency among the various regulatory agencies on handling complaints. Concerns with encroaching development were also discussed.
- Discussion on lack of equipment and interest in purchasing and sharing equipment with other small acreage farmers on a cooperative basis.
- Discussion on concerns with not being eligible for various USDA program benefits – not having enough animals or land to qualify for financial or other assistance.

Participants' perceived degree of knowledge about managing outdoor animal yards.

- About 61% of participants felt knowledgeable; 28% felt somewhat knowledgeable; and 11% did not feel knowledgeable.
- Those with knowledge attribute it to other farmers and animal owners, practical / life experience, trial and error, books, the internet, RI 4-H experience, UCONN seminars.
- Discussion on time and money constraints for implementing best management practices, as well as some things being out of anyone's control – weather issues.

Participants' desire to make changes in managing outdoor animal yards and factors that affect the ability to make changes.

- 89% of participants would like to make changes. Reasons include animal health and welfare (including foot health), reduce mud and bacteria, better rotation of pastures, improve feed value of pastures, improved feed management (heavy use area protection), environmental protection, aesthetics, overall good maintenance of farm and animals.
- Lack of land / space, money, time, equipment, knowledge, skill/ability, lack of a plan, and lack of education and outreach are the biggest barriers to making improvements.
- More discussion on costs and lack of USDA Program assistance.
- Discussion on lack of education and outreach – that many small acreage farms do not know where to start. Small acreage owners need education and outreach that is presented in a positive manner.

Things that are most likely to encourage animal owners to make improvements with managing manure and animal yards?

- Simple, effective information
- low cost, easy solutions
- education and outreach
- grants / financial assistance for small farms
- facilities to accept manure (in small, frequent amounts)
- Ag. agents (practical, friendly assistance)
- discussion / networking groups
- local resources (do not have to go out of state)
- having benefits of good practices (money saved/increased profit, improved animal health, improved appearance, helps environment) outlined in a positive way with pictures.

Additional comments: Dealing with neighbors (non-animal owners); public education regarding small farms; need more large animal veterinarians; need more information on dealing

with mortality – burial/disposal; information on grain silos and feed availability; hay production and storage; rodent and fly control.

Summary of two mail surveys conducted

- Mail surveys were conducted with the Rhode Island 4-H Program. Two surveys were developed for each 4-H household - one for an adult member and one for a teen youth (13-18) member of the household.
- Surveys were mailed to 376 4-H households associated with animal clubs.
- The first survey was mailed 4/4/07 with a 4/27/07 deadline, and the second survey was mailed on 4/24/07 with a 5/11/07 deadline.
- The 4-H Program sent list serv reminders on 5/3/07 and 5/15/07, and the survey deadline was extended.
- The 4-H Program mailed a final reminder letter on 5/21/07, continuing to extend the deadline.
- 63 adult surveys and 28 youth surveys were returned for a total of 91 surveys. 67% were returned from the first mailing and 31% were returned from the second mailing; 2% were undetermined (only youth survey returned).

Summary of Key Findings – Mail Survey

Survey responses were summarized based on age (adult versus youth), livestock type, education level, and gender. The various summaries indicated similar trends with regards to demographic information, ways of obtaining information, preferred learning styles, knowledge, barriers for adopting BMPs, and benefits or incentives for adopting BMPs. Detailed summaries can be viewed on our Program website at www.uri.edu/ce/healthylandscapes - visit the “About This Program” page.

The following summary is based on age: 63 adults (A) and 28 youth (Y).

Some responses are for adult only – youth surveys were a shortened version of the adult survey.

Demographic Information:

Adults: The majority of adult respondents are between the ages of 40-49, are female, have a combined household income exceeding \$80,000 per year, have college or post graduate degrees, live in Washington County, have property ranging from 1-5 acres, have owned/kept animals for an average of 19 years and spend an average of 15 hours per week caring for their animals – the majority of respondents indicate that both youth and adults in the household share the chores.

The majority of respondents have mixed livestock species (67%) followed by exclusively horses/ponies (22%) and exclusively poultry (11%). Overall, the majority of respondents have poultry, followed by horses/ponies, rabbits, cattle, and goats.

The majority of adults have the following on their properties: private wells, septic systems, vegetable and flower gardens, barnyards (mean 1.6 acres), and woodlands (mean 7.0 acres).

46% of respondents indicate having a pond, stream or wetlands on their property and 40% indicate having pasture (mean 2.8 acres).

Youth: The majority of youth respondents are between the ages of 13-15 and are female.

Top reasons for owning/keeping animals:

Adults: Pleasure/enjoyment; teach children values and responsibility; and competition/show.

Youth: Pleasure/enjoyment; competition/show; and for service and education activities such as 4-H projects.

Top sources of information:

Adults: Farmers/experienced animal owners; veterinarian; family and friends followed by animal professionals (farrier, riding instructor, etc.); books; and the internet.

When summarized by gender, male respondents placed a higher importance on the internet – ranking it second in importance.

Youth: Farmers/experienced animal owners; family and friends; veterinarian followed by animal association/club; animal professionals; and the internet.

Preferred ways of learning new information:

Adults: hands-on workshop; one-on-one instruction; how to guides; and farm tours.

Youth: hands-on workshop; one-on-one instruction; farm tours; and how to guides.

Knowledge: Manure management, animal management, land and water resources

Generally, adults and youth paralleled one another on their degree of knowledge. On some questions, a higher percentage of youth indicated “Don’t Know” compared to adults, but otherwise, they followed the adults as to whether they knew the correct response or indicated “don’t know.”

Manure Management:

Adults and youth were most unknowledgeable about the questions regarding proper manure storage and location factors. A higher percentage of youth indicated “Don’t Know” on questions concerning land application of manure and the ways through which manure can affect human health.

Animal Management:

Adults and youth were most unknowledgeable about the definition of an animal unit and factors for properly locating an animal yard. A higher percentage of youth indicated “Don’t Know” on questions regarding pasture management.

Land and Water Resources:

Adults were most unknowledgeable of the amount of land needed to support one animal unit (youth were not asked this question). About 30 to 40% of adults and youth indicated “Don’t Know” as to whether nitrogen and phosphorus are sources of water pollution and about one quarter of adults and youth indicated “Don’t Know” on questions regarding how various livestock activities can impact water resources.

Beliefs - why respondents believe proper manure and animal yard management is important:

Adults: To protect their drinking water quality; to protect animal health and well-being; to protect the surrounding environment; followed by to improve animal performance; to control odor and flies; and to be a good neighbor.

When summarized by livestock type, equine and poultry owners placed a higher importance on improving appearance of property over animal performance.

Youth: To protect animal health and well-being; to protect their drinking water quality; to protect the surrounding environment; followed by to improve animal performance; to be a good neighbor; and to control odor and flies.

Barriers to making improvements with manure and animal yard management – choose the one main factor that limits improvements:

Adults: The largest percentage of respondents indicates lack of knowledge followed by those feeling that there are no factors limiting or affecting management.

When summarized by livestock type, equine owners indicated money as the one main limiting factor while poultry owners indicated no factors limiting or affecting management.

When summarized by education level, respondents with less than a college degree indicated no factors limiting or affecting management.

When summarized by gender, female respondents indicated no factors limiting or affecting management.

Barriers to making improvements with manure and animal yard management – indicate the importance of various factors:

Adults: Equipment; cost; and time followed by labor; land; and ease of implementation.

When summarized by livestock type, equine owners place more importance on labor and land over time and poultry owners place more importance on land and ease of implementation over cost.

Adoption of Best Management Practices (BMPs) – likelihood of adopting various BMPs:

Adults: Respondents are most likely to adopt the following practices: Move a manure pile to another location on their property to reduce a possible threat to a drinking water well or water

resource; actively compost the manure; cover and/or line a manure pile with a tarp or plastic liner, or organic materials such as wood chips and leaves; and improve how manure is spread on their own land – based on soil tests, proper timing, etc.

About one third of respondents are also likely to install fencing to subdivide and rotate animal yards and pasture; restrict animals from having access to a drinking water well or water body; and install a roof over part or the entire animal yard. One quarter to one third of respondents indicated that these practices are not applicable to their situations.

Respondents are least likely to adopt the following practices: Pay to have manure hauled away to a place where it can be safely recycled or composted; store manure under a roofed area – does not need to be enclosed; and install a concrete pad/floor with walls or other storage structure to contain the manure.

About one third of respondents indicate that installing roof gutters to direct roof water away from manure storage areas and animal yards is not applicable to their situation.

Incentives/motivations for improving manure and animal yard management:

Adults: To demonstrate good will in my neighborhood and be considered a good neighbor; the availability of government technical and financial assistance; and being reminded that improvements are needed.

The majority of adults were the most undecided about hiring reputable private consultants and service providers to provide assistance; receiving stewardship awards; and being featured in various news media for good stewardship. Adults were least motivated by the fact that their peers/fellow animal owners were also making improvements.

Using the Needs Assessment to Develop an Extension Education Program

Information Sources and Preferred Learning Styles:

- The education program will rely on the use of hands-on activities and interactive models (such as the groundwater model) to teach information on the water cycle, land use impacts to water quality, and proper livestock management that reduce pollution risks. Slideshows will be developed in ways that result in effective reinforcement of hands-on activities through quality photos and message content.
- URI Peckham Farm will be used as a demonstration site for learning how to conduct site assessments as well as to view examples of Best Management Practices (BMPs).
- Other local farms will be explored for developing future farm tours and featuring various BMPs.
- Four of the lead project staff are experienced livestock owners and can relate to the target audience as such.
- The existing fact sheet and self-assessment series is designed to be a “how-to” guide that allows livestock owners to conduct site and risk assessments in the privacy of their own

homes. As the series is used in the training program, volunteers will provide feedback for effectively refining the series.

- Project staff will also work with local large animal veterinarians, animal professionals and organizations to notify them of this education program and the resources available.
- The program website will be continually updated and serve as a key way of making information available in a user-friendly way that appeals to the target audience. A Frequently Asked Questions page will be created to address some of the knowledge questions that recipients were most unsure about.
- Outreach materials, such as rack cards and displays, will be developed with effective and appealing message content that leads target audience members to the website and more information.

Consideration and incorporation of beliefs, barriers and incentives:

- The education program will acknowledge and identify the positive and important roles that livestock and large animals play in the lives of the target audience members.
- The education program messages and content will identify with the beliefs and incentives of the target audience including the importance of protecting drinking water quality, animal health and well-being, and being considered a good neighbor.
- The education program will focus on adapting BMPs to an appropriate scale that minimize barriers for adoption. This includes easy, low-cost practices that can be managed with limited equipment. The education program will also focus on proper composting methods for various scales and availability of resources, and provide information on equipment options such as small scale manure spreaders, equipment rental or sharing options, etc.
- The education program will highlight existing USDA Programs such as EQIP (Environmental Quality Incentives Program), as well as other state and local conservation programs to increase awareness and participation among eligible landowners.

Other points for referral to steering committee:

- Consider facilitating the development of local small farm groups/networks that meet regularly to discuss and share information, resources and effective BMPs.

These groups could work with agencies and organizations to:

- Develop innovative programs that provide financial and technical assistance to this target audience (those not eligible for other USDA Program Benefits).
- Develop informational resources that assist this target audience with understanding state and local laws and that work on improvements where appropriate, i.e. handling of complaints, sale of products, development of sensible ordinances.