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Cattle Corral Design- Learning by Doing

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Cattle Corral Design--Learning by Doing

Abstract

Quality Assurance training for adults has placed little emphasis on human injury and carcass defects such as bruising. To reduce the incidence of human injury and carcass defects, people need to understand corral design and animal behavior. An interactive curricula was developed using fence panels big enough to be placed on a tabletop. Participants were able to use the panels to make corral designs. There have been 2,304 people who have participated in the corral design and animal handling programs offered by the author. Evaluations averaged a 9.2 ± 0.58 on a 10-point scale (1=terrible idea, 10=great idea).

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Background

It is easier to show a three dimensional structure than to describe it. Many of us used toy bricks and logs to construct buildings and other structures when we were young. We could easily change and experiment with these toys designed for children. Just because many of our Extension audiences are adults, that doesn't mean such tools or toys can't still be useful in education settings.

Bruising from improper cattle handling costs the industry over \$250 million annually in carcass trim at the time of processing (NCBA, 2000). Cattle are responsible for about two-thirds of all human injuries caused by farm animals. Researchers at Oklahoma State University found that one-half of those beef producers who sustained an injury while working cattle felt the primary cause of the injury event was human error (Hunkle, Hubert, & Harp, 1997). Many producers have inadequate facilities or operations completely devoid of corrals. The objective of the project described here was to support the tactic of handling and sorting cattle in a safe and humane manner.

Methods

A \$12,500 grant was obtained from National Beef Check-off funds to implement the project. Miniaturized steel corral fence and squeeze chutes were built.

- Three kits of red, orange and green were constructed.
- Colors selected matched predominate colors used by companies that sell corral fences and squeeze chutes in the region.

The fence panels are 8 inches long and 6 inches high for easy use by adult hands. Each kit is placed in a suitcase (24" x 17" x 8") with wheels and a retracting handle for easy transport. The kits were designed to be approximately 40 pounds in weight. The kits and suitcases are thus light enough to meet current luggage limitations of U.S. airlines for travel. It cost approximately \$20 to ship a kit to another state in 2006 via regular mail delivery.

A PowerPoint™ presentation and handbook (Boyles, Fisher, & Fike, 2002) were created to supplement the learning module for adult producers. Below is a picture of a kit being used (Figure

1). Notice the squeeze chute in the right side of the picture.

Figure 1.
View of Corral Kit Being Used at Adult Education Program



A scenario for approximately 30 participants is as follows:

1. The program is held in a local auction facility or extension office.
2. All participants see and hear a 30-minute program the basic principles of corral construction and design.
3. The participants are divided into 3 groups and go to three locations in the facility.
4. The teams use one of the "kits" to develop a corral.
5. The participants view all the corrals as a group. The teams explain their designs.
6. A cattle corral self-audit was distributed.

Seventy-three percent of the programs had more than 30 people, and the largest group had over 300 participants from the year 2003 through 2005. An alternative scenario was created for large groups.

1. The program is held in a large meeting room.
2. All participants see and hear a 30-minute program on the basic principles of corral construction and design.
3. Each participant was given small pieces of paper.
4. One corral kit was set up in one area of the room as a complete corral and participants placed paper where they detected flaws.
5. The other 2 kits were placed in two other areas of the room with alternative designs of alleyways, pen placement or crowding areas and participants placed paper on the designs they most preferred.
6. All participants gather back together and discuss what was seen.
7. A cattle corral self-audit was distributed.

The corral self-audit consisted of 47 questions relating to topics on corral location and existence of the basic parts of a corral (holding pens, alleys, crowding pen, working alley, squeeze chute, and loading area).

Results

There have been 2,304 people who have participated in these corral design and animal handling programs offered by the author. The kits have been used by the author or by others in Ohio,

Nevada, North Dakota, Wisconsin, Kentucky, Indiana, Maryland, New York, Pennsylvania, West Virginia, Vermont, and the province of Ontario. Evaluations averaged a 9.2 ± 0.58 on a 10-point scale (1=terrible idea, 10=great idea). The program was the basis for a successful youth-oriented version relating to beef quality assurance (Yost & Boyles, 2006).

Thirty-seven percent of participants returned the self-audit at the end of the program. Among the self-audit evaluations, the most common needs were with holding pens. Respondents indicated some deficiencies in the existence of basic facilities such as alleys and crowding pens (33% and 37%, respectively). Forty-two percent of respondents indicated they would prefer to have more holding pens.

Conclusions

Engineering-based education curricula can be assisted with the use of tactile methods of interactive class instruction. Participants benefit from three-dimensional tools in corral design and animal handling. Attention to shipping requirements and costs need to be addressed if the tools are to be used by other educators.

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