Using RFID and traceability systems in stocker operations

A. M. Stehle, C. C. Craigie, M. D. Buser, and B. D. Adam

The National Whole Chain Traceability Institute (NWCTI) is a traceability research and extension program at Oklahoma State University. This institute is focused on the continued development and expansion of their stakeholder-driven whole chain traceability system. For this system cow-calf and stocker operators are critical links in initiating the traceability system records for individual animals in the beef production supply chain. The NWCTI traceability system requires digital record keeping using a cattle management software, ear tags with RFID capability and a RFID scanner to properly read the ear tags while processing cattle.

RFID tags are available from multiple suppliers in various forms. It is recommended that producers use U.S. Department of Agriculture (USDA) certified RFID tags. Current USDA animal traceability requirements for livestock handlers require that the tags are linked to the producer’s unique farm premise ID number. Additionally, the first three digits of the tag number specify the animal’s country of origin with the United States being designated as 840. The two most common forms of RFID tags are button tags or full tags with a readable identification number. Producers can purchase standardized or customized tags online from brands including Allflex™, Destron Fearing™, Temple™, and Y-Tex™. Button tags (half duplex EID) cost about $2.12 per unit while the cost of full tags (half duplex combo tag) is about $3.86 per unit. The tags are applied with a standard ear tag applicator and should be placed in the middle of the ear to prevent snagging or losing the tag.

To read RFID tags, a producer will need to use an RFID reader. Like tags, there are several reader brands available from numerous retailer and on-line vendors. To identify the tag, the reader is held within a few inches of the RFID tag until the software registers the number. The reader will beep or vibrate once the tag has been successfully read. The reader cost ranges from about $1,000 to $1,300. Despite this relatively high cost, proper implementation of an RFID tagging system can benefit producers and stockers in terms of reducing labor, paperwork, and animal stress during routine practices of working cattle.
Once a tag is scanned, the reader stores the identification number for future download or if the reader is connected to a computer, through a RS232 or Bluetooth adapter, the data can be immediately transferred to the user's cattle management software. Software immediate transfer of the identification number to the user's software. If the producer is using the reader while working cattle and downloading the identification numbers directly to a management software, the producer can enter additional data into the software once the identification number is transferred. This data might include: weight, vaccinations, castration, dehorning, and other preconditioning procedures. Once a producer has finished working their cattle and entering data into their on-site cattle management software, they can upload and store the recently completed records to the NWCTI system once they have Internet access. The records can then be reviewed, edited, and/or shared (in full or in part) by the producer or data owner (Figure 3). Complete and thorough record keeping is a key to managing costs and animal welfare in today’s cattle operations. RFID technology and using whole chain traceability software are excellent tools to improve your record keeping.

Figure 3. An excel sheet may automatically be populated with the data associated with the RFID tag, or it may be uploaded directly to a traceability server. This facilitates faster operations by reducing time spent manually.

For more information about the NWCTI system, contact Dr. Michael Buser using the information below. YouTube videos related to the NWCTI system can be viewed at: https://goo.gl/MwPhoS.