

WRITING A USDA PROCESS VERIFIED PROGRAM

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2010

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## ACKNOWLEDGEMENTS

First, I would like to thank my advisor, Dr. Richard Cavaletto, for his guidance and his time in helping me complete this project.

Second, I would like to thank Aaron Lazanoff for his leadership, diligence, and many hours spent working on the program.

Third, I would like to thank Vickie Robertson for sharing her extensive knowledge in the writing of PVP programs and for helping us complete the document. This project would have been much harder without her.

Fourth, but most important, I would like to thank my dad and mom for all the support, guidance and wisdom they have given me throughout my early life and through my educational career.

## ABSTRACT

This senior project undertakes the writing of a United States Department of Agriculture (USDA) Process Verified Program (PVP) for the cattle in California Polytechnic State University's Beef Program. This project covers the writing of the program, its submittal for review and auditing from the USDA, and the management changes required in Cal Poly's beef program.

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## INTRODUCTION

### Background

To better ensure quality and traceability in agricultural products, the United States Department of Food and Agriculture (USDA) developed Process Verified Programs (PVP). These programs are relatively new ideas, dating back to the early 1990's, that came about due to the increasing demand for quality, safety, and traceability set forth by countries importing U.S. agricultural products. These countries have set up strict regulations especially in the area of U.S. meat exports. Because of the scare of Bovine Spongiform Encephalopathy (BSE) in the U.S. in 2003, importers of U.S. beef have laid out stringent requirements that all beef exports must meet. The age of the meat being top priority since BSE can only be found in cattle 30 months of age or older. Where the product was produced, or the source, is also part of these programs, so that if a problem is found with a product, the source of this product could be traced and put to a stop. Several countries require that these claims of age and source be backed by a Process Verified Program or Quality Systems Assessment to ensure that product does in fact meet their requirements. Since the advent of these programs, cattle that are enlisted in one are usually of more value in the marketplace due to the higher versatility of the product because of its eligibility to be sold in a worldwide market.

### Justification

In order to stay at the forefront of the ever-changing beef industry, California Polytechnic State University has decided to write its own Process Verified Program. The PVP will serve as a learning tool and more importantly add value to their calf crop. It is also thought that in the near future, these programs may be made mandatory by the USDA and federal government. Furthermore, as a University, the beef program at Cal Poly strives to stay on the cutting edge of the direction that the beef industry is headed as a whole in order to be a leader in the agricultural community and to better educate its students for the future of agriculture.

### Objectives

The PVP will, for this project, be to age and source verify the calf crop of the Cal Poly beef programs herd. For this project a Process Verified Program will be written according to United States Department of Agriculture (USDA) guidelines outlined in the ARC 1001 Procedure (USDA, 2004) and according to the needs and wants of the Cal Poly beef program. Finally, the written program will be internally audited and then be submitted to the USDA and will go through a desk audit and a field audit and can then be certified. Once approved, the program will then be implemented and Process Verified Program will be in place for the beef cattle at Cal Poly.

## LITERATURE REVIEW

In today's cattle market producers are doing everything in their power to add value to their calves in order to receive more for them come sale time. Additionally, cattle buyers are looking for those calves that have that extra something that makes them stand out from the other animals at the sale barn or on the video auction.

### Adding Value to Calves

One simple way to add value to calves is by having them on a good vaccination program and having them weaned from their mothers. Weaning is a very stressful time in a calf's life and some buyers do not want to have to put up with the losses that can be associated with calves that are not weaned. Furthermore, calves that are on a solid vaccination program are less risk to a purchaser because they are less likely to get sick after purchase. In one study, researchers from Montana State University (MSU) found that weaned calves were worth \$17.64/head more than calves that were not weaned and calves that had been vaccinated added another \$14.81/head compared to calves that did not receive vaccinations (Ishmael, 2009). Additionally, a 2005 study that analyzed 10 years of Superior Livestock Auction sale data demonstrated that calves that followed a vaccination or weaning protocol received premiums ranging from 99 cents to \$7.91 per hundredweight (Foster, 2009). There are many weaning and vaccination programs, often called preconditioning programs, that calves can be "enrolled" in.

#### Examples of Preconditioning Programs:

- **VAC-45** — typically infers that calves are vaccinated, weaned, booster-vaccinated and further preconditioned at least 45 days after weaning.
- **VAC-34** — typically infers that calves are vaccinated at least 3-4 weeks before weaning.
- **VAC 24** --- calves are vaccinated between 2 and 4 months of age (Stoltenow, Lardy, 1999)

Another means of adding value to calves is by having them age and source verified. Age verification is the ability to verify how old an animal is and source verification is the ability to trace a product through a production and distribution system to the end user (IBC, 2006). These are both important elements because several foreign countries have strict age regulations on the beef that they import from the United States. Animals must meet age requirements in order to be eligible for export. For example Japan requires that all beef imports be under 20 months of age and several other countries require meat to be under 30 months of age. This causes meat processors demand for age and source verified cattle to increase which in turn can lead to a premium come sale time. Depending on supply, the value of age verification is typically \$25 to \$45 per head at harvest. Because of this premium received at harvest, cattle feeders are often willing to pay premiums for feeder cattle which are age verified since they have the opportunity to capture this value upon selling the cattle at harvest (Greiner, 2009).

## Verification Programs

In 2003, Bovine Spongiform Encephalopathy (BSE) was discovered in the United States. Since that time export markets have been gravely affected due to requirements and restrictions placed on US beef by foreign countries. Because BSE affects cattle that are 30 months of age or older, verification of age at the time of slaughter is very important to the importing countries, making it the chief requirement that producers and programs are concerned with (Stutts, 2006 and NCBA, 2009).

In order to be age and source verified a producer must have their cattle enrolled in an established Process Verified Program (PVP) or Quality Systems Assessment Program (QSA) or create their own PVP or QSA, through the USDA (Greiner, 2009).

The USDA explains its Process Verified Program in the following manner:

The USDA Process Verified Program provides companies that supply agricultural products or services the opportunity to assure customers of their ability to provide consistent quality products or services. It is limited to programs or portions of programs where specified process verified points are supported by a documented quality management system. The specified process verified points are identified by the supplier. The USDA Process Verified Program uses the International Organization for Standardization's ISO 9000 series standards for documented quality management systems as a format for evaluating program documentation to ensure consistent auditing practices and promote international recognition of audit results (USDA, 2009, LS Process Verified Program).

The USDA explains its Quality Systems Assessment Programs in the following way:

The USDA Quality System Assessment (QSA) Program provides companies that supply agricultural products and services the opportunity to assure customers of their ability to provide consistent quality products or services. It is limited to programs or portions of programs where specified product requirements are supported by a documented quality management system. The specified product requirements may be identified by the company or may be those outlined in a USDA Export Verification (EV) Program (USDA, 2009, LS QSA).

The two programs are seemingly very similar. "In general, PVP programs are designed to verify cattle prior to marketing (applicable to feeder cattle sales); whereas, QSA programs define mechanism by which records are maintained and transferred within a production system (retained ownership with a known feed yard and packer)," explains Dr. Scott P. Greiner of Virginia Tech (Greiner, 2009). There are actual four main differences between the two programs that the USDA outlines as follows:

Table 1. PVP and QSA differences (USDA, 2008).

	<b>PVP</b>	<b>QSA Program</b>
ISO 9001:2000 Elements	Contains <b>ALL</b> Elements, plus, USDA requirements.	Contains <b>MOST</b> Elements, plus USDA requirements.
Auditing	Minimum of ONCE per year.	Minimum of TWICE per year.
Claiming Ability	Freedom to develop individual claims including those outlined in QSA.	Limited to age, source, and NHTC claims.
USDA Shield Use	PVP Shield and terminology can be used in marketing materials.	No shield available to use in marketing materials.

Both programs share similar attributes as well such as each animal must have a distinct individual or group identification, sufficient records must be kept to be able to trace single animals back to their ranch of origin or birth, and birthdates of individual animals or the oldest individual in the group, must be recorded (Raper, No Date).

When a producer enrolls in or writes their own PVP program, they are opening up a variety of doors when it comes to marketing their calves. PVP programs allow the producer to market their cattle using the USDA Process Verified Shield. This shield is widely recognized and has weight behind it and buyers of the product can rest assure that this product is exactly what the producer claims it to be.

### Record Keeping

Once a producer is a part of a PVP or QSA there are many guidelines that must be followed and requirements that must be met. The most important part of either program is record keeping. Dr. Scott P. Greiner from Virginia Tech spells out these important guidelines for a producer's record keeping practices in order to stay in line with a PVP or QSA:

1. Tag all cows and calves with a unique number in your herd. Tag calves at or near birth.
2. Keep detailed calving records such as the IRM Red Book. This includes calf ID, dam ID calving date, and sex of calf. At the very least, record the date the first calf was born and the day the last calf was born. Be able to differentiate calves born in different calving seasons (unique tag number, color, letter code, etc.). Keep records in a safe, readily accessible location.
3. Be able to differentiate any purchased cattle (stockers) from home-raised calves. This can be done through unique ear tags and different management locations. Documentation and management must be able to clearly show

which calves are born on the farm vs. those purchased with no opportunity for mis-identification.

4. Keep records of all cattle inventory, movements, re-tagging, and sales.
5. Become a BQA certified producer. Keep BQA records up to date as required. Record all vaccinations, dewormings, implanting, or health treatments.
6. Keep all records in a safe, readily accessible location for minimum of three years.

(Greiner, 2009)

Each company that has its own PVP or QSA has its own standards and guidelines, that match its goals as a company, as approved by the USDA. Each program must meet certain requirements and pass audits performed by USDA auditors. The procedures that Dr. Greiner outlines give a producer an idea as to what it takes to be enrolled in one these programs.

There are many different ways that producers can keep track of their records throughout the year. Producers can keep records simply by writing daily activities and calf birth dates down in notebooks or calendars or use computer spreadsheet software like Microsoft Excel or other programs.

In recent years, several computer software programs have been developed in order to help organize producer's records and activities that take place on the ranch. One popular program is CattleMax, a record-keeping software program that "makes record keeping easy" (Cattlemax). Other programs include CattleWorks, CattlePro, and many others. Each offer unique templates for keeping track of records ranging from herd inventories to medical reports. Cattle can be kept track of individually, with pages containing birth dates, weights, tag numbers, expected due dates, sires, dams, treatments, and other information pertaining to that specific animal (Cattlesoft, Inc, 2009, CattleWorks, LLC, 2009, Bowman Farm Systems, Inc, 2009).

The main goal of any record keeping system should be to be accurate, organized, and traceable.

### Cattle Identification

There are many forms of animal identification available in the marketplace today. The most common methods for cattle are ear tags, electronic identification tags (EID), freeze branding, and hot iron branding. Ear marking is also used by many producers as an additional source of identification.

Visual Ear Tags. Producers can ear tag their cattle as a quick visual way of recognition and as a way of individually tracking an animal through its lifespan on the ranch. If each animal is assigned its own tag with a specific tag number it can be easily differentiated from other cattle in the same pen or field. Ear tags are available in various colors and sizes and can be placed in either the left or right ear or both ears. Tagging systems can be very elaborate with different colored tags for different breeds or sexes or a number of

other variations. However, the simpler the system, the easier it is for an owner, worker, visitors, auditors, and anyone who may look at it, to follow. Visual tags can either have numbers printed on them when they are manufactured or come blank so that producers can write in what they want or there can be a combination of printed and written letters on tags. Information on the tag varies from operation to operation, but information that may be included are: individual identification number, dams (mothers) number, sire (fathers) code or number, date of birth or other useful information. The major drawback with tags is because they are placed in the ear (much like an earring in humans) they can be ripped out of the ear if they get caught on something or were applied incorrectly. Written ear tags can also fade over time so that they can be hard to read. Therefore, it is usually suggested that ear tagging not be the sole form of identification for livestock, but that they should be used in conjunction with another source of identification such as freeze branding (Neary, 2002).



Figure 1. Sample of blank visual identification tags (Cattlestore, Visual tag, 2009)

Electronic Identification. Another form of livestock identification is the use of electronic identification. Electronic identifications can include electronic ear tags, microchips, and electronic collars. Each of these forms of identification uses a scanner that reads the radio signal from the tag or chip as a numerical code. The code is then transferred to a computer that brings up a file for that specific animal. Files can contain extensive information about the animal including sex, breed, treatment history, mating, parents, and other information about the animal (Neary and Yager, 2002).

Microchips are implanted under the skin of an animal or encased in a bolus and ingested by ruminant animals, and contain a radio transponder and antenna. Microchips are useful, however, the equipment needed to implant and read them is costly and it is possible for them to migrate into the meat of the animal causing safety concerns for consumers (Neary and Yager, 2002).

Electronic identification tags, also known as EID tags and Radio Frequency Identification (RFID), are similar to visual ear tags in the way that they are placed in the ear of cattle using the same application as a visual tag. However, EID's are much smaller making it harder for them to be ripped out and lost. EID tags are usually used in conjunction with other forms of identification in case the tag is lost (Neary and Yager, 2002).



Figure 2. Electronic identification tag (Cattlestore, Allflex EID, 2009).

Electronic collars are placed around the neck of an animal and have an electronic tag placed on them. They are similar in function to EID tags however they can be dangerous because they can get caught on things and can possibly choke the animal. Electronic collars are not heavily used, but are most commonly found in dairy operations (Neary and Yager, 2002).

### ISO 9001:2000 Requirements

The International Organization for Standardization's (ISO) 9001:2000 specifies requirements for quality management systems. The organization lists two basic criteria that the quality management system must follow (ISO, 2009):

1. Needs to demonstrate its ability to consistently provide product that meets customer and applicable regulatory requirements, and
2. Aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable regulatory requirements. (ISO, 2009).

### ARC 1001 Procedure

The Audit, Review, and Compliance (ARC) 1001 Procedure outlines, in detail guidelines and requirements for writing a PVP. The ARC 1001 Procedure is a template for a PVP and when a PVP is written it should mirror that of the 1001 Procedure. It provides a list of headings with certain requirements that must be met under each appropriate heading. When writing, one makes the PVP specific to their program by information about their program, using the 1001 Procedure as an outline. If one were to look into writing a PVP, all of the necessary information is contained in the 1001 procedure. The ARC branch is part of the USDA's Agricultural Marketing Service (AMS). (USDA, 2004).

### Conclusions

Cal Poly wants to write a Process Verified Program in which they can claim age and source verification and use the USDA Process Verified Shield. In the program being developed for Cal Poly's beef program, many of the dynamics listed above will be put to use. The beef program already enlists the use of the CattleMax record keeping software in keeping track of its cattle. Detailed field records are obtained and quickly entered into the database, along with cattle movements and cattle treatments and other daily activities

that occur in the operation. Additionally, the Cal Poly beef program currently places visual ear tags and EID tags in all of the calves born each year. The beef program hopes to make the PVP a learning tool and more importantly hopes to earn a premium come sale time by having their calves source and age verified with the USDA Process Verified Shield.

## PROCEDURES AND METHODS

### Design Procedure

Parameters and Scope. The Cal Poly beef program first had to decide whether to write a Quality Systems Manual (QSA) or a Process Verified Program (PVP). Once it was decided that a PVP would be written, the beef program addressed what the parameters and scope of the PVP would be. Some of these dynamics included:

- How will the program benefit the beef program and its product?
- When is the desired implementation date of the program?
- Who would be in charge of the program once established?
- What does the beef program hope to accomplish by implementing this PVP?
- How will the program benefit the students involved in the beef program and the University as a whole?
- Which cattle will be involved in the program?
- What claims/verification points should be used?
- What changes will need to be made to the existing management and record-keeping system?

Once most of the issues were addressed, a large amount of studying was done on the USDA websites and other established PVP's were examined for some ideas. Additionally, help was generated from Vickie Robertson, who has written many programs of this nature.

### Project Creation Procedure

Document Writing. Once the parameters and scope of the program were somewhat defined, the actual writing of the PVP manual began to take place. The USDA has strict guidelines and constraints set in place that must be followed when writing a PVP. The ARC 1001 Procedure (USDA, 2004.) was the primary document used as it outlines the exact items that the program needs to address and the specific titles and headings that the program documents would require. Moreover, each heading in the ARC document contains a paragraph below it setting the framework for what a written program language should sound like and what phrasing the program would need to entail for it to be certified. Furthermore, the ARC 1001 documents showed what the finished project should look like and what each page in the program should contain including headings, dates, format, and wording.

By following the outline provided in the ARC documents, progress was able to be made on the project, by individually writing each section of the ARC 1001 document. Each portion of the outline required different needs that would need to be met. Some headings required the creation of additional documentation, such as cattle movement and treatment cards, in order to better explain or to back-up statements or claims made in the writing.

Maps of all the units and ranches that are part of the beef unit had to be generated or downloaded to be submitted along with the documentation.

In addition to maps, a list of any Animal Science personnel that would have any part of the program managing, their titles, and an organizational flow chart were also required documentation.

Educational materials were also generated in order to be able to teach the students that will be working under the program. Any beef unit employees will be required to complete these quizzes at determined time intervals throughout the year in order to ensure their knowledge of the PVP. Additionally students in the Animal Science beef classes will be educated about the PVP and may have quizzes or information presented during classes.

Furthermore, protocols were set up in order to document how situations would be handled if things went awry. How non-conforming (cattle that are not part of the program, or are taken out of program) would be handled

All supplemental documents were submitted in the form of appendices to the main Process Verified Program manual.

Changes to Beef Unit. In addition to the extra documentation, some record keeping and management changes were made in order to accommodate the documentation and the requirements set forth in the USDA guidelines. Access to record-keeping documents and to the CattleMax software was restricted to better ensure that no tampering of records could occur. The office where the main computer station for the beef unit is located will have to be locked and only certain beef unit personnel could be allowed to have keys. Additionally, only a selected few people can be allowed to know the password to the main computer and CattleMax software database.

Since the beef program already has a record keeping system in place with very good field records and documentation, only a few changes were required to the overall way records were kept. However, several minor changes and additions to the record keeping practices were made. How outside cattle (cattle not owned by Cal Poly) are identified was a major issue with the program due to the large amount of outside cattle that the beef program is asked to feed and manage.

The main form of cattle identification, besides hot iron branding, in the beef program is ear tagging with a visual ear tag. The tags contain the calves' individual four-digit identification number, beginning with the year number, along with the calves' dam's number, and the sire code of the sire of the calf. Additionally, calves receive an Electronic Identification Tag (EID) that can be electronically scanned into a computer. Cal Poly's beef program uses both of these forms of identification in order to better ensure that the misidentification of an animal will not occur. To identify outside cattle, very different tag colors were chosen to apply to non-Cal Poly cattle and the tags read

NCPC which stands for Non-Cal Poly Cattle, in order to ensure that mistakes would not be made as to identification.

### Evaluation Procedure

USDA Audits. Before the program can be implemented it has to go through an internal audit and two audits by the USDA. The first audit the program will go through is an internal audit. This audit is done by someone at Cal Poly who has experience in quality control programs. This audit is mainly a precursor to the USDA audit and is designed to find mistakes or discrepancies in the program before ever submitting it to the USDA for its auditing procedure. It can help speed up the USDA auditing procedure by fixing any obvious problems before the USDA looks at it.

The USDA's first audit is a desk audit, where the documentation that has been submitted by Cal Poly will be submitted to the USDA and it will be read through and examined carefully for flaws, mistakes, and inconsistencies. If discrepancies are found, the program will need to be fixed and then re-submitted for an additional desk audit

The second audit that will need take place is the field audit. The field audit will only be able to occur once the written program has successfully passed the internal audit and the desk audit. The field audit will entail the auditing of the beef unit facilities themselves and ensuring that what is stated in the manual is what is actually occurring at the units. If any discrepancies are found, they will need to be fixed, and the manual will need to be re-submitted for another audit. Once the manual has passed the field audit it can then be implemented at the beef unit.

The USDA audit procedures can take some time. Once submitted for a desk audit, the return time for the program is a few weeks. If any discrepancies are found, the program must be corrected and re-submitted, which will require even more time. After the program passes the desk audit, it can then be submitted for the field audit, which will again take a few weeks to complete. The USDA will inspect our facilities and practices and make sure that things line up.

### Implementation Procedure

Implementing the program will consist of following the guidelines and parameters set up in the PVP manual that this project has written. Employees will be trained in protocols, management, and record-keeping practices. Rules must be followed and loose ends tied up because once implemented, the USDA will conduct field audits at a minimum of once per year. Non-conformances that may be found that require fixing or changing will be handled accordingly and re-examined for approval. However, this can be a lengthy process, but this will not occur as long as the program is adhered to by beef unit employees and managers.

Problems that arise with the program such as manual parameters that may end up being realized as unrealistic or impossible to follow without extensive altering to the program

or its facilities may be required to be edited. New documents will be drafted and will have to be submitted to the USDA for auditing and if found to be satisfactory, the manual can be edited.

Also, once implemented, Animal Science personnel can decide if they think the program can be taken even further and if they would like to add further verification points such as natural and non-hormone treated cattle to the program. This can be done by completing writing the necessary documentation that will cover these points. That part of the program will need to be submitted for approval and the premises will again need to be audited to ensure that the paperwork lines up with the practices.

## RESULTS

### The Written Program

The complete written Process Verified Program is available for review in Appendix B.

A complete Process Verified Program was written to verify the age and the source of the Cal Poly beef program's cattle. The written program consists of a Quality Manual that consists of an organizational flow chart for the School of Agriculture and the Animal Science Department. The Quality Manual is the main largest part of the documentation for the program and contains a description and scope of the program itself and also highlights which verification points the program will address. In the case of this PVP, the points the program will verify are age and source. The Quality Manual follows the USDA ARC 1001 document procedures. There are six clauses in the procedure with several subheadings under each of the clauses. The clauses and subheadings are as follows:

1. Quality Management System
  - a. General Requirements
  - b. Documentation Requirement.
2. Management Responsibility
  - a. Management Commitment
  - b. Customer Focus
  - c. Quality Policy
  - d. Planning
  - e. Responsibility, Authority and Communication
  - f. Management Review
3. Resource Management
  - a. Provisions of Resources
  - b. Human Resources-Competence, Awareness, and Training
  - c. Infrastructure
  - d. Working Environment.
4. Product Realization
  - a. General
  - b. Planning of Product Realization
  - c. Customer-Related Processes
  - d. Design and Development
  - e. Receiving
  - f. Production and Service Revision
  - g. Control of Monitoring and Measuring Devices.
5. Measurement, Analysis and Improvement and includes the subheadings
  - a. General
  - b. Monitoring and Measurement
  - c. Control of Non-Conforming Product within the QMS
  - d. Analysis of Data
  - e. Improvement.

6. Promotional Materials
  - a. Control of Promotional Materials.

Each of these clauses contains subheadings and each of these subheadings contains sub-subheadings that go into greater detail about each clause and heading. Each section of the document is written specific to Cal Poly's beef program.

Attachments to the Quality Manual were created from sub-subheadings in the Quality Manual. The attachments go into detail about procedures identified in the subheadings. Attachments to the Quality Manual are as follows:

1. CPSU Organizational Charts
2. Control of Documents Procedure
3. Control of Records Procedure
4. Training Procedure
5. Receiving Procedure
6. ID and Traceability Procedure
7. Internal Audit Procedure
8. Control of non-conforming Product Procedure
9. Corrective Action Procedure
10. Preventative Action Procedure
11. CPSU Maps of Program Activity Locations
12. Forms, tags, etc.

Control of Documents and Records describes how information is protected, either paper documents or electronic documents and explains who is authorized to access and edit this information. The training procedure describes how faculty, new employees, and students are trained on how to use and follow the PVP guidelines. ID and traceability refers to how each animal is individually identified using visual and electronic ID tags and how each animal can be traced to its current location, including ranch, facility and even pen or pasture number. Control of non-conforming product refers to how animals that are not part of Cal Poly's PVP are handled. This could include calves that were once in the program and for some reason are no longer included in the program. These animals are identified with a Non-Cal Poly Cattle (NCPC) ear tag. The tag is brightly colored and displayed in one of the animals' ears. Also, maps of all Beef Unit Facilities are attached along with necessary forms and samples of ear tags.

Furthermore, there are many supporting documents that were developed because of requirements within the Quality Manual. Supporting documents encompass reports, checklists, and forms. Reports include an Outside Cattle Receiving report and Cattle Movement reports. These reports, along with all other documents, are designed to make sure that all data and information is written down on specific documents to ensure traceability and to ensure that handling practices are correct and that no outside cattle are able to slip into the verified herd. Additionally, a Calf Shipping Manifest document was created for when calves are shipped after sale, a document is generated containing specific identification of each individual calf that will be loaded on the truck. Other

reports include Corrective and Preventative Action reports which pertain to how non-conformances are handled if found and how they can be prevented in the future. The last report is a Non-conforming calf report. Any calf deemed non-conforming for any reason is out of the program and this report states which calf it is and why they are no longer included in the program.

Two checklists are contained including an Internal Audit checklist that will be used and followed during an internal audit of the program and a Pre-Shipment Review Checklist, which is used before calves are sold and shipped off the ranch. The Pre-Shipment Review checklist ensures that all calves being loaded on the truck are in the program and that every calf is accounted for and that there are no non-conforming cattle.

Other documents included are a Wand Verification Form and a Wand Control Form. These forms pertain to the Electronic Identification (EID) Wand. The wand passes over the EID tag and reads the number associated with that tag. The Beef Program has two of these wands and these forms indicate where and who has the wand if it is removed from their location and also verifies that the wands are working correctly by testing it on several tags prior to using them on calves.

Quizzes and tests were written to be able to evaluate the potential users and managers of the program. The PVP, documents and facilities, will be audited internally by a Cal Poly employee, who was not involved in the writing of the PVP, but has knowledge in Quality Assurance documents, before submittal to the USDA. After the internal audit is completed, all program documents will be submitted to the USDA for auditing to determine if the program fits USDA standards and guidelines. If the program passes the desk audit, a field audit will be performed. If the field audit is passed, the program will then be implementable.

### Changes to the Beef Unit

Changes to the Beef Units management and handling practice were kept to a minimum. A record keeping system was already in use at the beef program that used paper and computer programs such as Excel as well as using the CattleMax software program to keep track of data electronically. However, the system was further refined and has become very meticulous with no loose ends. Controlling who enters and records the data was one of the major changes to the existing program. Persons will have to be specified in order to be able to access and alter or add electronic data. The computer and software is password protected and only limited persons will know the password. Also, the software program must be backed up weekly to the Animal Science Server. Additionally, the office where the main records computer is located will need to be locked with only specific persons having keys so that tampering cannot occur. Furthermore, documentation, electronic or hard copy, must be available at beef unit facilities and must be kept on file for one year after creation. Also, more forms and documents are required under the program to ensure that things are handled correctly including a form to ensure the wands used for reading electronic tags are calibrated and tested before use on cattle to

ensure that they are reading tags correctly. Additional documentation required includes Internal Audit Checklist, Pre-Shipment Review Checklist, Customer Satisfaction Survey, training documentation and quizzes, preventative and corrective action reports, non-conforming cattle reports, a wand control form, and a pre-shipment review checklist.

In addition to altering the record keeping and data systems, some management practices had to be added. The most significant change pertains to how cattle that do not belong to Cal Poly are handled. The beef program takes in many outside cattle each year for feed trials, breeding, and managing. The PVP required that these outside cattle be very easily distinguishable from cattle that were enrolled in the PVP. Each outside animal that comes onto the beef facilities must receive a Non-Cal Poly Cattle (NCPC) visual ear tag. This is to ensure that no mix-ups will occur and even if cattle were to get mixed, non-program cattle would be easy to identify and sort out.

#### Audit Status

Currently, the written program is completed and some all changes are being fully implemented in the beef program. The internal audit will be taken place shortly, within the next few weeks. After the internal audit is completed, the USDA's desk and field audits will take place soon after.

## DISCUSSION

The Process Verified Program was somewhat difficult to write and may be challenging to fully implement. However, the documents, better record keeping processes, and heightened responsibility will hopefully prove to be beneficial to the Beef Program, the University, and its students. As of right now in the market, age and source verified calves receive premiums at auction and are eligible for export throughout the world. This premium may not be around for much longer and it is wise to take advantage of it while one can.

Originally, the scope of the program was to include a “Natural” verification as well. This verification was dropped soon after writing began because some of the changes that the program would require were not possible at the Cal Poly Beef Program at that time. Additionally, the program would have taken much more time to write. Natural and Non-Hormone Treated Cattle (NHTC) may be sought after in the future and can be added to the program with the proper paperwork and documentation.

Writing a Process Verified Program is a large and difficult undertaking. It requires a lot of work and a lot of time to be completed. If a private ranch desires their calves to be age and source verified, or verified natural, it would probably be better to have a company with an existing PVP to verify their cattle through the existing program. Many private companies offer this to customers. Companies such as IMI Global, ABS Global Inc, AgInfoLink USA, and about 30 other businesses all have PVP programs. A list of current PVP programs is available on the USDA, AMS website at [www.ams.usda.gov](http://www.ams.usda.gov). (USDA, 2010). Ranchers are required to enroll in a company’s program and follow guidelines set by the company and the USDA. Ranchers must fulfill certain requirements pertaining to record keeping and processes also and may be required to have a ranch premise ID and may also be required to undergo training in the program. Some documentation is required and the ranch is auditable by the PVP providing company. The company with the PVP is auditable by the USDA. A helpful list of Frequently Asked Questions pertaining to enrolling in a company’s PVP is available at [http://www.aginfoLink.com/pvp.html#Program Description](http://www.aginfoLink.com/pvp.html#Program%20Description) (AgInfoLink, 2008).

The benefit of going through a company with an existing PVP is that ranchers do not have the headache of writing their own lengthy program and it will definitely save costs. Calves sold under these programs will be more desirable to buyers and may also receive premiums at markets. The premiums received will most likely offset the cost to enroll in the companies program and may even surpass the cost resulting in pure profits for the producer. Cal Poly’s beef program chose to write a PVP for themselves, not only for the benefit to the beef program, but more importantly, to better educate its students in the ever-changing beef industry. Cal Poly is the first University to have a Process Verified Program and joins a short list of only 32 other businesses that have a Process Verified Program (USDA, 2010).

## RECOMMENDATIONS

When writing a PVP it is very helpful to have someone who knows how they work, how they are handled, and how they are implemented working with the writers. Seeking help from a consulting firm or private individual will greatly increase the likelihood that the written program will pass USDA audit procedures more quickly and that nothing is missed during the writing of the program.

It may be beneficial for Cal Poly to seek further verification points because as of right now in the market, calves that are verified in age, source, NHTC, and natural are receiving premiums. However, achieving verification for some of these points is somewhat difficult and may require extensive alterations to the beef program.

If a private ranch wanted to age and source verify their calves, it may be more beneficial and less costly, in both time and money, to have their cattle verified through a company who is able to source and age verify cattle through their existing Process Verified Program. This would require following the rules and regulations of that company's program and require some documentation and audits by the verifying company. This would save time by not having to write a program of one's own. A ranch that does go through an existing company will be auditable by that company. The company can choose to audit a ranch to ensure that management processes meet standards and that documentation procedures meet guidelines set in their PVP's.

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## APPENDICES

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APPENDIX A

HOW PROJECT MEETS REQUIREMENTS FOR THE ASM MAJOR

## HOW PROJECT MEETS REQUIREMENTS FOR THE ASM MAJOR

### ASM Project Requirements

The ASM senior project must include a problem solving experience that incorporates the application of technology and the organizational skills of business and management, and quantitative, analytical problem solving.

Application of Agricultural Technology. The project will involve the application of new cattle management and handling technology including traceability and verification systems through the use of sophisticated visual and electronic identification systems as well as advanced record keeping.

Application of Business and/or Management Skills. The project will involve business/management skills in the area of livestock management, systems (cattle production) management, and financial management.

Quantitative, Analytical Problem Solving. Quantitative problem solving will include looking at whether it would be better to write one's own PVP or register under a providing companies already established PVP. Analytical problem solving will include fixing problems within the Beef Departments handling practices and also fixing problems, if they arise, with the program itself.

### Capstone Project Experience

The ASM senior project must incorporate knowledge and skills acquired in earlier coursework (Major, Support, and/or GE courses). This project incorporates knowledge/skills from these key courses:

- BRAE 418/419 Ag Systems Management I and II
- BRAE 203 Ag Systems Analysis
- ASCI 221 Intro to Beef Production
- ASCI 311 Advanced Beef Management
- ASCI 490 Advanced Production/Management Enterprise
- AGB 301 Food and Fiber Marketing
- AGB 321 Farm Records
- AGB 322 Principles of Agribusiness Management
- AGB 331 Farm Accounting
- CSC 110 Computer Applications

### ASM Approach

Agricultural Systems Management involves the development of solutions to technological, business or management problems associated with agricultural or related industries. A systems approach, interdisciplinary experience, and agricultural training in

specialized area are common features of this type of problem solving. This project addresses these issues as follows.

Systems Approach. This project involves the application of new industry technology to an agricultural system (cattle production system). It also involves a business/management problem of whether or not it is feasible financially to apply a PVP to the Universities cattle.

Interdisciplinary Features. The project highlights business and system management as well as application of relatively new agricultural technology.

Specialized agricultural knowledge. This project applies specialized knowledge in the areas of business and management techniques as well as livestock production, handling, and marketing.

APPENDIX B  
CAL POLY PROCESS VERIFIED PROGRAM QUALITY MANUAL AND  
ATTACHMENTS

CAL POLY STATE  
UNIVERSITY (CPSU)  
SAN LUIS OBISPO,  
CALIFORNIA

PROCESS VERIFIED  
PROGRAM (PVP)

QUALITY MANUAL

January 26, 2010

## **1.2.2 QUALITY MANUAL**

### **PURPOSE**

The purpose of this quality manual is to establish, document, implement and maintain a Quality Management System (QMS) that ensures that products conform to the requirements of the ARC 1001 Procedure and to the specified process verified points.

### **ORGANIZATION OF THE COMPANY**

The organizational chart for the beef herd management at Cal Poly State University, San Luis Obispo Campus (CPSU) and listing of management personnel with program responsibilities affecting the QMS are attached to the Quality Manual as Attachment 1.

### **SCOPE**

Cal Poly State University (CPSU) is one of the universities in the California State University system. The University specializes in a “learn by doing” structure. As such the university maintains several different types of livestock herds for the instruction of students in livestock production and management. The scope of this Quality Manual shall be the beef herd specifically. The beef herd is a closed herd meaning that no program animals are purchased from outside sources. While outside cattle are brought on to campus for special projects, they never enter the program and are not to be considered for the specified process verified points, and the same holds true for breeding bulls and cows. A map indicating the locations where the beef herd is maintained and where Program activities take place is attached to the quality manual as attachment 11. In addition to the Specified Product Points the scope of this manual includes adherence to ARC 1030J Procedure, *USDA Export Verification (EV) Program Specified Product Requirements for Beef - Japan*.

### **SPECIFIED PRODUCT REQUIREMENTS**

The specified process verified points for this QMS will be for age and source verification.

### **DOCUMENTED PROCEDURES**

The documented procedures required by ARC Procedure 1001 may be found as attachments to this quality manual.

### **1.2.3 CONTROL OF DOCUMENTS**

CPSU has established and implemented a documented procedure that details the diligence by CPSU to control all documents to meet the requirements of the ARC 1001 Procedure. The Cal Poly State University Control of Documents Procedure is attached to this Quality Manual as attachment 2.

### **1.2.4 CONTROL OF RECORDS**

Records have been established and implemented to ensure evidence of conformity to program requirements, to specified process verified points and the effective operation of the QMS. CPSU has established and implemented a documented procedure to define the controls needed to meet all of the control of records requirements of the ARC 1001 Procedure. The Cal Poly State University Control of Records Procedure is attached to the Quality Manual as attachment 3.

## **2.0 MANAGEMENT RESPONSIBILITY**

### **2.1 MANAGEMENT COMMITMENT**

Management is committed to the development and implementation of the QMS as evidenced by the documented procedures and records kept. Internal audits, management reviews and input from QMS personnel ensure management's commitment to the continuing improvement of the effectiveness of the QMS. The importance of meeting customer, statutory and regulatory requirements are communicated to Program personnel during training and daily observation by management. Management has developed and implemented the quality policy and quality objectives as documented below.

### **2.2 CUSTOMER FOCUS**

Management ensures that customer requirements are met through active communication and assessment of the customer's needs and satisfaction with the products provided with the goal being to enhance customer satisfaction whenever possible.

### **2.3 QUALITY POLICY**

Management has determined that the quality policy of CPSU shall include:

- To provide our customers with quality cattle of known age and place of origin by the adherence to the requirements of the QMS, established documented procedures and impeccable record keeping of the established required records.
- To improve the effectiveness of the QMS as customer needs, CPSU needs or Program requirements change.
- To establish and review Quality Objectives through the use of program reviews, internal audits, third party audits and customer feedback.
- To ensure that all Program personnel are fully integrated into the Quality Policy during QMS training.
- To ensure that the suitability of the Program continues to meet Program Quality Objectives.

## **2.4 PLANNING**

### **2.4.1 QUALITY OBJECTIVES**

The primary Quality Objective of this QMS is strict adherence to the Quality Policy through the implementation of the documented procedures required to meet the requirements of the ARC 1001 Procedure and the requirements of the

specified process verified points to provide customers with quality cattle of known age and place of origin. Management ensures that the quality objectives, including those necessary to meet specified process verified point requirements are established at all relevant functions and levels within the company as described in the Program personnel position descriptions and the appropriate required procedures. The consistent and measurable adherence to the Program's Quality Objectives are verified through the impeccable records of all Program activities.

#### **2.4.2 QUALITY MANAGEMENT SYSTEM PLANNING**

Management ensures that the planning of this QMS meets all of the General Requirements as stated in section 1.1 of the ARC 1001 Procedure through the dedication to detail in the required documented procedures, program review, internal audits, third party audits, customer feedback and personnel observations. The integrity of the QMS is ensured by internal communication with all Program personnel and training of appropriate personnel prior to the implementation of any changes to the Program. Any significant changes to the QMS are submitted to AMS prior to implementation of the changes.

### **2.5 RESPONSIBILITY, AUTHORITY, AND COMMUNICATION**

#### **2.5.1 RESPONSIBILITY AND AUTHORITY**

Management ensures that QMS responsibilities and authorities are clearly defined and communicated to QMS management personnel via their position descriptions and training. The CPSU organizational chart and/or position descriptions are attached to this QM as attachment 1. The position descriptions clearly outline the auditable QMS responsibilities and authorities of each Program personnel with program responsibilities.

#### **2.5.2 MANAGEMENT REPRESENTATIVE**

The management representative with the authority to act on behalf of CPSU is the Program Manager identified on the California Polytechnic State University *Process Verified Program* flow chart as the Beef Cattle Operations Manager. The Program Manager is responsible for ensuring that the processes needed for the QMS are established, implemented and maintained. He/She reports to top management concerning the performance of the QMS and any needs for improvement via a quarterly report. He/She ensures the promotion of awareness of customer requirements and specified process verified points through internal communication with Program personnel.

#### **2.5.3 INTERNAL COMMUNICATION**

The communication process utilized is primarily email via the campus computer system and close interaction of Program personnel. All personnel with Program responsibilities are informed of any changes appropriate to their responsibilities. The effectiveness of the QMS is dependent upon the timely and efficient communication to all appropriate personnel.

## **2.6 MANAGEMENT REVIEW**

### **2.6.1 GENERAL**

The Program Manager or his/her designee is responsible to perform the Program Review at least annually typically after the internal audit and annual AMS audit. The review assesses the continuing suitability, adequacy and effectiveness of the QMS as well as the need for improvement and or changes. The review also includes the assessment of the quality policy and quality objectives. The Program Manager is responsible to provide top management with a written report of the Program Review. The report is a required record of the QMS and is handled per the Control of Records documented procedure. (Attachment 3)

### **2.6.2 REVIEW INPUT**

The CPSU PVP Management Review Report includes the results of internal and AMS audits, customer feedback, process performance as measured by product conformity, status of preventative/corrective actions, follow-up from previous Management Reviews, changes that could affect the QMS and recommendations for improvement.

### **2.6.3 REVIEW OUTPUT**

The results of the CPSU PVP Management Review include any decision and actions related to improvement of the effectiveness of the QMS and its processes, improvement of product related to customer requirements (if needed) and identification of resources needed.

## **3.0 RESOURCE MANAGEMENT**

### **3.1 PROVISIONS OF RESOURCES**

CPSU has determined the resources necessary to implement and maintain the QMS and to continually improve its effectiveness. The necessary equipment and identification methods are reviewed as part of the Program Management Review and updated as necessary. Field Records and animal identification tags including EIDs are available to appropriate personnel and the data entered into the Password Protected Data System as required by the QMS. Computers for data entry are available at appropriate work sites.

CPSU has determined the resources necessary to ensure that Customer requirements and expectations are met. Customer requirements are reviewed as part of the Program Management Review and customer surveys are used to continually enhance customer satisfaction.

### **3.2 HUMAN RESOURCES - COMPETENCE, AWARENESS and TRAINING**

The Program Manager or his designee is responsible to ensure that all personnel with QMS responsibilities and those performing work that affects product quality are competent on the basis of appropriate education, training, skills and/or

experience. Training is provided to all new personnel and refresher training is conducted on an as needed basis. Records for all training activities conducted are retained for at least one year after their creation. Additionally records of other experience, skills and education is on file if available. CPSU maintains a clear documented procedure meeting all of the QMS requirements for the training of all program personnel. The procedure, *CPSU Training Procedure for the Process Verified Program* and related documents are attached to the QM as attachment 4.

### **3.3 INFRASTRUCTURE**

CPSU has determined the infrastructure necessary to achieve conformity to program requirements. The buildings, workspace and associated utilities are provided on the CPSU campus and associated sites where program activities take place. The Beef Operations Manager's Office houses the primary data entry computer which is linked to the Password Protected Database housed in the Animal Science Office. The software used to record data ensuring the process verified points of the beef herd is CattleMax and the data is backed up on the Animal Science Server. The hard copy field record books and animal identification tags including EIDs are also located in the Beef Operations Manager's Office. Beef Operations has designated pickup trucks and transportation equipment provided by the University to move cattle or personnel from one location to another as necessary. Cattle-handling equipment such as cattle pens and chutes are maintained at appropriate locations where Program activities are performed.

### **3.4 WORK ENVIRONMENT**

CPSU has determined the work environment needed to achieve conformity to the product requirements and manages its personnel to facilitate the acquiring of the data necessary to ensure conformance to the QMS requirements. CPSU determines the approximate birthdate of each calf by the breeding date, so personnel are prepared to observe cattle that may calve soon. Appropriate personnel are available at locations where cows are due to calf to record the data required on the calf birthing records on a daily basis. Personnel are encouraged to bring to management's attention any deficiency in the process or any suggestion for improving the process.

## **4.0 PRODUCT REALIZATION**

### **4.1 GENERAL**

Because of the nature of the CPSU beef cattle program at this time, outside cattle are never purchased for the PVP program. All calves that enter the PVP Program are born from cows within the closed herd maintained by CPSU. The only cattle purchased on occasion are breeding bulls/cows which would not be eligible for the PVP Program.

### **4.2 PLANNING FOR PRODUCT REALIZATION**

CPSU has developed and implemented the processes necessary to ensure all calves born meet the requirements of the customer and the QMS. The processes, documentation, and resources necessary to ensure the process points are established and available at all sites where Program activities are performed. The records required to provide evidence that Program product requirements are met are available at all sites where Program activities are performed, and also provide a means to verify, validate and monitor the quality objectives.

### **4.3 CUSTOMER-RELATED PROCESSES**

#### **4.3.1 DETERMINATION OF REQUIREMENTS RELATED TO THE PRODUCT**

CPSU has established and implemented the process verified points required to meet the established quality objectives to be verification of the age and the birthplace of origin of all calves identified as Program eligible. CPSU does not have a standard delivery requirement for Program animals and works with the customer on an individual need basis so that animals may be delivered by CPSU or picked up at the University by the customer. At present there are no other needs of our customers except for those contained within the quality objectives of age and source verification of Program animals. There are no statutory or regulatory requirements for the product except for those already detailed in the ARC Branch 1001 Procedure. CPSU has determined that there are no additional requirements to meet the quality objectives; however, should any additional requirements become necessary CPSU will revise the QMS to conform to the requirements.

#### **4.3.2 REVIEW OF REQUIREMENTS RELATED TO THE PRODUCT**

Prior to the development of the QMS, CPSU performed a review of all QMS and product requirements to define the product requirements by establishing clear quality objectives and the process points necessary to achieve them. The review was conducted to assure that CPSU could meet the requirements of the QMS as well as customer requirements. CPSU requires customers to clearly define their requirements prior to the fulfillment of an order for calves. At this time the only customer requirements accepted are for age and source verification of Program calves. Any conflict of requirements between the customer and CPSU is resolved prior to an order for calves being accepted. Additionally, CPSU performs a review of product requirements as part of the annual Management review to ensure that all product requirements are met and that they meet the requirements of the customer. Should any review necessitate changes to the QMS, all appropriate personnel are informed of the changes and/or trained concerning the changes. Records of all reviews are maintained for at least one year from their origination date or the annual audit.

#### **4.3.3 CUSTOMER COMMUNICATION**

CPSU communicates with its customers by mail, email and special on-campus events. Promotional materials (if developed) may be used to inform potential

customers of the certification status of the QMS and product eligibility for age and source identification and certification. CPSU accepts inquiries and special handling and/or delivery instructions from customers by phone, email or regular mail. Contracts to purchase calves must be made by email or regular mail and are not binding on CPSU until a confirmation is sent to the customer. Customer satisfaction surveys are recorded from each customer receiving Program calves concerning the acceptability of the calves to the customer's needs. All records pertaining to customer communications are retained for at least one year from their origination date.

#### **4.4 DESIGN AND DEVELOPMENT**

CPSU respectfully excludes this section of the requirement due to the nature of the product and the process points of the QMS; there is no need to further design or develop the product. Any changes to the QMS must be submitted to AMS prior to their implementation, therefore, should the needs of the QMS change and design and development become necessary, the changes will be made and submitted.

#### **4.5 RECEIVING**

CPSU has developed and implemented a clear and precise procedure for the receiving of outside animals. The procedure and related documents are attached to the quality manual as attachment 5. Currently CPSU does not receive any cattle that are identified as eligible for the Program. The only cattle received into the Beef Operation are those designated for special studies and/or special events such as feeding studies and the annual bull sale. These animals are uniquely identified for the specific study and/or event, and are not mixed with Program animals or are visually identifiable as non-Program animals. These animals do not become the property of CPSU. Some Program animals may be removed from the Program to participate in the bull sale or other events/studies, and these animals are identified with a red button ear tag and/or the specific program (NCP (Non Cal Poly Cattle) or Bull Test ) visual tag. Once an animal has been removed from the PVP Program, it does not re-enter. CPSU does upon occasion purchase and/or receive breeding bulls/cows to expand the gene pool of its beef herd. These animals are not identified as eligible for the Age and Source Verification Program.

#### **4.6 PRODUCTION AND SERVICE PROVISION**

##### **4.6.1 CONTROL OF PRODUCTION AND SERVICES PROVISION**

CPSU has implemented strict control over the production practices to provide evidence of conformity of its Age and Source Verification Program. The quality manual which describes the characteristics of the calves eligible for the Program is available at all associated sites where Program activities are conducted. Appropriate work instructions, duties and responsibilities are available and reviewed as necessary with appropriate personnel. All required equipment is available for use as needed by qualified assigned personnel. A monitoring device

(EID reader) is available at all sites where program activities are performed by the use of portable readers that are kept at either the Operations Office or the Beef Cattle Specialist's Office and transported to the location where it may be needed. All calves are verified as Program calves upon shipment by utilization of the visual ear tag and/or verification of the EID with the EID reader. Upon shipment each calf ID is compared to the Program Eligible Calf List that was generated from Cattlemax prior to shipment. Should a visual tag be lost, the animal's EID is scanned and a new visual tag is re-installed on the animal. Should the EID and the visual tag be lost, and the calf can not be re-paired with its mother cow, the calf is removed from the Program and a red button ear tag is applied to the calf.

#### **4.6.2 VALIDATION OF PROCESSES FOR PRODUCTION AND SERVICE PROVISION**

CPSU validates its production practices through the adherence to the ARC 1001 Procedure, this quality manual, established procedures, management reviews, internal audits, third party audits and customer input. Through the internal audit process the criteria for review and approval of the Program processes are established, the approval and use of equipment is justified, the use of specific methods and procedures are validated, the records are thoroughly reviewed for accuracy and training records are reviewed to assure that personnel are evaluated for their knowledge and qualifications to perform all Program activities. All Program calves are verified prior to shipment via the EID and/or the visual ear tag.

#### **4.6.3 IDENTIFICATION AND TRACEABILITY**

CPSU has developed and implemented a detailed procedure for the identification and traceability of all animals identified as Program eligible and it is attached to the quality manual as attachment 6.

#### **4.6.4 CUSTOMER PROPERTY**

At this time CPSU does not take possession of any customer's property for inclusion into the Age and Source Verification Program. CPSU therefore respectfully requests exclusion of this requirement. Should the Program change to include care of customer property, the change will be submitted to AMS prior to implementation.

#### **4.6.5 PRESERVATION OF PRODUCT**

CPSU uses two forms of identification (Visual ear tags and electronic ear tags (EID)) to assist in the preservation of the identification of all Program eligible calves until they are shipped to the intended customer. CPSU handles the calves in a manner consistent with identification retention. CPSU has the capability to scan EIDs on animals out in the pasture locations to verify the identity should visual tags be lost. Prior to shipment a list of all Program eligible calves is generated through Cattlemax. All animals scheduled for shipment under the Age and Source Verification Program are processed through a loading

chute and the visual tag and/or EID is scanned to verify the identity of each animal which is then compared to the Program Eligible Calf List. A manifest of the calves included in the shipment is generated which contains the birthdate, place of birth, age, visual and EID tags of each animal. The manifest is provided to the customer.

#### **4.7 CONTROL OF MONITORING AND MEASURING DEVICES**

CPSU has determined that measuring devices are not necessary to provide evidence of conformity to product requirements at this time.

CPSU utilizes visual eartags to identify all of the cattle on campus. Different colors are used for the commercial herd (most of the Program cattle) and the registered herds. Individual identification numbers are applied to the visual tags to specify each individual animal. The visual tags are not specific to the Program; however, they are linked via the computer system to the EID tag.

CPSU also utilizes electronic identification ear tags (EID) for all Program calves as an additional monitoring method for Program eligibility. Each EID is verified to work as designed prior to placement in the ear of each calf by using a reader wand. If for any reason an EID tag can not be verified to read, it is disposed of and not placed into a calf's ear. The reader wands are verified to be properly calibrated to read the EID tags at least annually prior to the calving season by reading 10 EID tags and comparing the reading to the numbers provided with the tags. Should the verification fail, (mis-read any one of the ten sampled) the wand manufacturer's representative is retained to officially test and re-program the wand(s). The wands are kept in the Beef Cattle Operations Office or in the Beef Cattle Specialist Office which are controlled by locked doors with limited access by appropriate personnel only. Only appropriate Program personnel are allowed to remove the wands from the office and must document when a wand is removed and returned to the office. Control and verification of the EID wands are documented on the CPSU EID Monitoring Forms. The EID tags are also maintained in the locked Beef Cattle Operations Office, and removed by appropriate personnel when needed for placement. The EID number is entered into the database when it is placed into the animal linking the EID with the visual tag identification number.

All Program required records are entered and maintained on computers at the Beef Cattle Operations Office with Cattlemax software installed for data entry. The Cattlemax software is an established program and has been in use at CPSU prior to the establishment of the Age and Source Verification Program. For added safety the electronic records are automatically backed up on the Animal Science computers in the Animal Science Offices.

## **5 MEASUREMENT, ANALYSIS AND IMPROVEMENT**

## **5.1 GENERAL**

CPSU has developed and implemented the monitoring, analysis and improvement processes needed to demonstrate the conformity of Program calves, the conformity of the QMS and to continually improve the effectiveness of the QMS as documented in this quality manual, related procedures and records. This is accomplished through Program reviews, internal audits, third party audits, impeccable records, customer feedback and daily observation by trained Program personnel.

### **5.2.1 CUSTOMER SATISFACTION**

CPSU monitors customer satisfaction with each shipment of Program calves. The customer is requested to complete and return to CPSU a brief survey that is enclosed with the shipment documentation for each shipment of calves. Returned surveys are reviewed by Program Management personnel and retained as a record relating to customer perception of CPSU's fulfillment of Program requirements. Should customers not complete and return the survey, Program personnel contact the customer via email or telephone to obtain the survey information. Records are maintained of all customer contact. The information obtained is reviewed during management reviews and internal audits as a performance element of the QMS as a method to improve the effectiveness of the QMS and to improve the satisfaction of the customer.

### **5.2.2 INTERNAL AUDIT**

CPSU has developed and implemented a documented internal audit procedure (Attachment 7). Internal audits are performed at least annually and are used to determine that the QMS conforms to the planned arrangements, conforms to the requirements of this procedure, conforms to the QMS requirements established by CPSU and that it is effectively implemented and maintained. The Program Manager is responsible to ensure that actions are taken without delay to eliminate identified non-conformances and their causes. The results of all internal audits are reviewed during the annual management review of the QMS.

### **5.2.3 MONITORING AND MEASUREMENT OF PROCESSES**

CPSU monitors the QMS processes through use of program reviews, internal audits, third party audits, impeccable records, customer input and daily communication between Program personnel and the Program Manager. All of these methods combine to demonstrate the ability of the processes to achieve planned results; however, when the planned results are not achieved CPSU immediately takes corrective/preventative actions to ensure conformity of the product.

### **5.2.4 MONITORING AND MEASUREMENT OF PRODUCT**

CPSU monitors the Program eligibility of all calves identified as Program calves regularly through the processes, documented procedures, program reviews, internal audits, third party audits, impeccable records, customer input and daily communication between Program personnel and the Program Manager. Upon

shipment the Program eligibility of each calf is verified through visual identification and/or the EID. Additionally Program personnel complete a Pre-shipment Verification Checklist to document the conformance of product requirements. The checklist is signed by the Program Personnel performing the pre-shipment review that authorizes release of the shipment.

### **5.3 CONTROL OF NON-CONFORMING PRODUCT WITHIN THE QMS**

CPSU has developed and implemented a documented procedure that meets all QMS requirements and the requirements of the ARC 1001 Procedure. The CPSU Control of Non-Conforming Product Procedure ensures that all non-conforming product is identified and segregated from conforming product and is attached to the QM as Attachment 8.

### **5.4 ANALYSIS OF DATA**

CPSU analyzes the data generated from Program monitoring, Program reviews, internal audits, third party audits and customer feedback to demonstrate the suitability and effectiveness of the QMS. CPSU evaluates where continual improvement of the effectiveness of the QMS can be made through the analysis of monitoring the Program. The data includes, but is not limited to, customer satisfaction surveys, Cattlemax and other production records, shipping documentation, corrective/preventative actions, control of non-conforming product and training documentation and evaluation. CPSU does not utilize outside suppliers.

### **5.5 IMPROVEMENT**

#### **5.5.1 CONTINUAL IMPROVEMENT**

CPSU continually strives to improve the effectiveness of the QMS through the use of the quality policy, quality objectives, internal and third party audit results, analysis of data, corrective and preventative actions, and management review. Additionally upper management empowers all Program Personnel to suggest ways in which to improve the over-all effectiveness of the QMS.

#### **5.5.2 CORRECTIVE ACTION**

CPSU has developed and implemented a corrective action procedure that meets the requirements of this QMS and the ARC 1001 Procedure and it is attached to the quality manual as attachment 9.

#### **5.5.3 PREVENTATIVE ACTION**

CPSU empowers all Program personnel to bring to management's attention any potential problems concerning the QMS and product quality. CPSU has developed and implemented a Preventative Action Procedure (attachment 10) that meets all of the QMS and ARC 1001 Procedure requirements.

## **6 PROMOTIONAL MATERIALS**

## **6.1 CONTROL OF PROMOTIONAL MATERIALS**

CPSU does not intend, at this time, to use the “USDA Process Verified” shield or the term “USDA Process Verified” in any advertising or promotional materials, nor are the “shield” or “term” currently displayed on the shipping documents. Should CPSU decide to incorporate the “shield” or “term” in its shipping documents, or develop advertising or promotional materials displaying the “shield” or “term”, the required procedure would be submitted to AMS prior to implementation of the use or display of the “shield” or “term”.

