**Project Summary**

Determining Demand for USDA-Inspected Beef Slaughter in an 18-County Region of California

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This survey project was conducted to determine the number of beef producers interested in utilizing three specific USDA-inspected slaughter and processing facilities located in the southern-Sacramento Valley and foothill region of California for beef animals. At the time the survey was distributed only one of the three facilities in the survey was able to process beef, one facility was under construction and one facility was only considering upgrades to USDA-inspection. The survey was first available to producers online in early-March 2011 and was distributed through email lists maintained by Cooperative Extension and the California Cattlemen’s Association. Paper copies of the survey were mailed to approximately 2,000 producers between the months of May and July 2011. All completed paper surveys were returned to the Solano County Cooperative Extension office. The survey and cover letter are available to view online at <http://cesolano.ucdavis.edu/files/122662.pdf>.

The survey was designed to gauge producers’ interest in three specific facilities described as Company A, Company B and Company C. Actual business names were not used to avoid the impression of endorsements from the University of California. Many survey questions were focused on the potential use of beef slaughter services from Company A since that type of service is a primary barrier to direct marketing beef products. The company profiles that were provided with the survey are below.

**Company A** is an employee owned company that has specialized in lamb products for nearly 50 years. Company A currently slaughters and processes lamb and goat under USDA inspection in their Dixon, CA facility and is considering the addition of small-scale beef slaughter services. Beef carcass processing and vacuum wrapping services will be offered, including high-end cutting and packaging of retail products. Hanging capacity is not a limitation. Ground meat will not be provided. Delivery of finished goods will be offered to the Bay Area and Central and Southern California. Certified organic services may be offered only if there is sufficient demand.

**Company B** is a nearly completed new facility in Esparto, CA (13 miles west of Woodland). Company B will provide USDA-inspected processing services for beef, lamb, goat, swine and game carcasses. Custom processing and vacuum wrapping will be the main service while also providing ground meat, sausage, curing, smoking, dry aging and retail. The facility will have a capacity to hang about 50 beef carcasses. If Company A provides USDA-inspected slaughter services, transport of carcass quarters between facilities (30 mile distance) will be arranged. Certified organic services may be offered, but not initially.

**Company C** is currently a State-licensed processor of meat and wild game and is located in Shingle Springs, El Dorado County. Facility upgrades necessary to offer USDA-inspected processing services are being explored and depend largely on upgrade costs and potential demand for services. If the necessary upgrades are completed, Company C will provide USDA-inspected custom processing and wrapping services for beef, lamb, goat, swine and game carcasses, including ground meat and sausage. The facility will have a capacity to hang 30 to 40 beef carcasses. Transport of carcasses from USDA-inspected slaughter facilities to Company C will be arranged.

**Survey Results**

Geographic Range of Survey Respondents

A total of 132 completed surveys were received by the end of September 2011. Of that total, 83 of the completed surveys were returned as paper copies and 49 were completed online. We received surveys from at least 31 different counties in California, primarily from the counties within and surrounding the southern-Sacramento Valley and northern San Joaquin Valley, and some from as far as Siskiyou and San Luis Obispo counties.

Figure 1 shows the distribution by county of the survey respondents. The first six counties in the figure (yellow bars; tier 1) represent the counties directly bordering the home county of Company A. The next tier (blue bars; tier 2) represent those counties bordering the first tier counties and then all other counties (green bars; tier 3) from which we received surveys.

Figure 1. Number of survey respondents from each county\*.

\*Yellow bars = tier 1 counties, blue bars = tier 2 counties, green bars = tier 3 counties

Interest in Utilizing Facilities

Survey participants were asked to indicate whether or not they would use each facility for specific services or if they were unsure of their choice. The results of this question are presented in Figure 2. The greatest amount of interest was to use Company A for harvest (slaughter) service (Yes=46%; Unsure=29%; No=23%) and Company B for processing (Yes=45%; Unsure=27%; No=24%). Interest in using Company A for processing services was much more uncertain with 37% unsure and 24% answering “yes.” Almost half of the respondents indicated that they would use or were unsure about using Company C for processing services.

Figure 2. Number of survey respondents indicating interest in using specific facilities (n=132).

Interest in Beef Slaughter Service

In order to quantify the potential demand for beef slaughter service from Company A survey participants were asked to estimate the number of beef animals they would send to Company A over a 2.5 year period of time, in two-month increments (Table 1.). Respondents indicated relatively low demand for slaughter services in the latter half of 2011 followed by generally increased demand in 2012-2013. Demand cycles were apparent with the January – April time period showing much lower levels of demand, most likely due to availability of market weight animals that is dependent on animal age and forage resources.

Table 1. Number of beef animals respondents would send to Company A for slaughter, partitioned by the respondents’ indicating “Yes” or “Unsure” regarding their use of Company A.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 2011 | | |  | 2012 | | | | | |  | 2013 | | | | | |
|  | Jul Aug | Sep Oct | Nov Dec |  | Jan Feb | Mar Apr | May Jun | Jul Aug | Sep Oct | Nov Dec |  | Jan Feb | Mar Apr | May Jun | Jul Aug | Sep Oct | Nov Dec |
| Yes | 164 | 172 | 129 |  | 550 | 88 | 798 | 189 | 816 | 767 |  | 46 | 48 | 470 | 341 | 505 | 473 |
| Unsure | 80 | 83 | 70 |  | 35 | 32 | 131 | 218 | 92 | 76 |  | 45 | 53 | 171 | 277 | 100 | 77 |
| Total | 244 | 255 | 199 |  | 585 | 120 | 929 | 407 | 908 | 843 |  | 91 | 101 | 641 | 618 | 605 | 550 |
|  |  |  |  |  | Total 2012 = 3,792 | | | | | |  | Total 2013 = 2,606 | | | | | |

The survey was designed to collect information regarding producers’ willingness to use the three facilities, the degree of certainty in sending beef animals to Company A for slaughter and the counties where producers raise beef livestock. This information can be used to partition other survey information such as the number of beef animals they will send for slaughter (Figures 3, 4 & 5). Two graphs are used to display the information in Figures 3, 4 & 5 to demonstrate the effect of one outlier survey return. The outlier survey respondent indicated a desire to use Company A for slaughter and a high likelihood of sending 2,000 beef animals to Company A in 2012 and zero animals in 2013. This was the only survey participant indicating a desire to send above 620 beef animals in 2012, which created erratic jumps in the number of beef animals for the time periods of Jan-Feb, May-Jun, Sep-Oct and Nov-Dec 2012. While this one survey is a significant contribution to the total number of animals, a better understanding of the trends can be seen by removing this one outlier from the graphed data. Figure 6 shows the distribution of the 67 survey respondents who are willing to send beef animals to Company A for slaughter in 2012. Of the 67 respondents, 63 or 94% will send less than 125 beef animals each (total=895; average=14), 2 will send between 125 and 250 beef animals (total=294; average=147), one will send 620 animals and one will send 2,000. While the outlier survey respondent indicated that they are very likely to send 2,000 animals to Company A in 2012, it is prudent to understand the risk of basing demand projections and corresponding capital improvements on data in which one beef producer is supplying 52% of the beef animals to Company A for slaughter.

Removing the outlier survey data (see Figures 3b, 4b & 5b) shows increasing numbers of beef animals going to Company A for slaughter from 2011 to 2013 with seasonal periods of low numbers between January and April. A large majority of respondents willing to send beef animals to Company A are quite certain that they will use the facility (Figure 3) and are very likely to send the indicated number of animals (Figure 4).

The geographic distribution of beef producers willing to send animals to Company A for slaughter shows that the Tier 1, 2 and 3 counties (see Figure 1 for counties in each Tier) will supply 17%, 68% and 14% of the total number of beef animals respectively, with the outlier removed (Figure 5b). The outlier survey respondent did not indicate the county of operation, but in a phone conversation the respondent indicated that beef animals would be sourced from multiple locations.

Figure 3a. Number of beef animals producers would send for slaughter at Company A, partitioned by willingness to use the facility (with outlier).

Figure 3b. Number of beef animals producers would send for slaughter at Company A, partitioned by willingness to use the facility (without outlier).

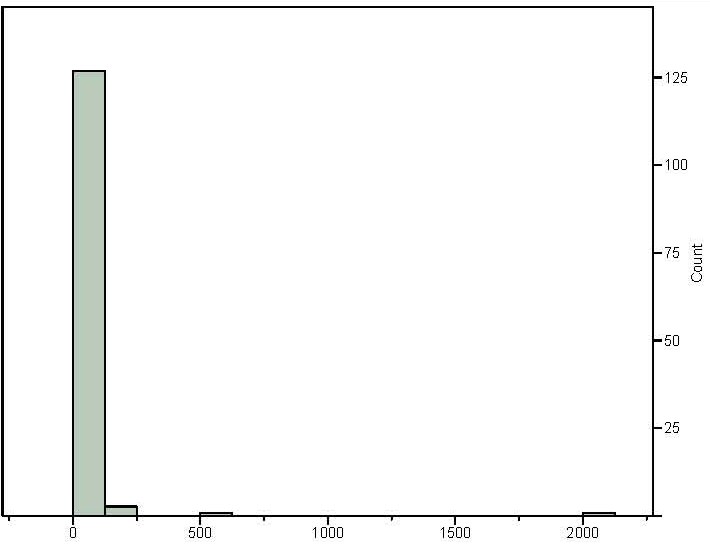
Figure 4a. Number of beef animals producers would send for slaughter at Company A, partitioned by likelihood of sending the indicated number of animals (with outlier).

Figure 4b. Number of beef animals producers would send for slaughter at Company A, partitioned by likelihood of sending the indicated number of animals (without outlier).

Figure 5a. Number of beef animals producers would send for slaughter at Company A, partitioned by geographic regions as described in Figure 1 (with outlier).

Figure 5b. Number of beef animals producers would send for slaughter at Company A, partitioned by geographic regions, as described in Figure 1 (without outlier).

Figure 6. Distribution of respondents separated by the total number of animals they are willing to send to Company A in 2012.



Number of animals.

Interest in Beef Processing Service

The survey data did not allow a direct determination of the number of beef carcasses that producers would send to Companies A, B and C for USDA-inspected processing, since that question was not asked in order to keep the survey brief and focused on demand for slaughter services. The potential number of beef carcasses producers would send to Companies A, B and C was estimated based on the respondents’ answer as to whether they would use a particular company for processing (question 1) and the number of beef animals they would like to have slaughtered at Company A (question 3). For example, if a respondent answered “Yes” or “Unsure” to processing at Company B and indicated they will have 20 beef animals slaughtered at Company A, all 20 carcasses go to Company B for processing, assuming that the producer will use only one company for processing. This assumption is flawed since the producer may choose to use more than one processor, but at a minimum this shows the potential number of animals producers may choose to have processed at each facility. Figures 7 shows the potential number of beef carcasses in 2012 and 2013 that producers might be willing to have processed at Company A, B and C.

Figure 7. Potential number of beef carcasses for processing in 2012 and 2013 at Company A, B and C. The number of carcasses reflects the number animals producers indicated to have slaughtered at Company A and answered “Yes” or “Unsure” to utilize Company A, B or C for processing.

A closer review of the number of beef carcasses expressed for each company in Figure 7 shows that the sum of carcasses for all companies for both years (13,302 carcasses) far exceeds the total number of beef animals respondents are willing to send to Company A for slaughter in 2012 and 2013 (6,398 beef animals), as expressed in Table 1. The large discrepancy is due to respondents indicating that they will use more than one facility for processing causing the same animals to be included in more than one company for processing. This explains the reason why Figure 7 only shows the potential number of carcasses for each company.

Ratings of Additional Services

In order to help beef slaughter and processing businesses understand the needs livestock producers have for specific services related to beef slaughter and processing, survey participants were asked to rate the importance of nine services ranging from livestock pick up to the delivery of carcass quarters or meat cuts. Respondents rated each service as one that they “Must Have,” or “May Use, But Not Necessary,” or “Do Not Need.” The specific services and survey responses are shown in Table 2. Meat grinding was the highest rated service with 78% of respondents rating this as “Must Have.” Although the preservation of individual animal identification of ground meat was not included in the survey, many beef producers participating in niche meat markets at a small scale have indicated, through personal conversations, a strong desire to maintain animal identification of ground meat. Providing an extended carcass hanging time also rated high with 54% or respondents saying they must have this service and 35% saying they may use it. Dry aging was the next highest rated service, but some respondents may have confused dry aging with extended carcass hanging time. Dry aging refers to primal cuts and not carcass halves or quarters, but this differentiation was not clearly identified in the survey. Many producers (38%) indicated that they must have their label placed on meat packages and 27% rated the delivery of meat cuts or carcass quarters as a service they must have. Smoking and curing of meat was a service that many producers may use (48%), while organic and Kosher services and animal pick up were not highly rated.

Table 2. Survey respondent ratings of beef slaughter and processing related services.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Number of Responses and Percent of Total Responses | | | | |
| Service | Must Have | May Use | Do Not Need | Total | No Answer |
|  |  |  |  |  |  |
| Meat grinding | 83  78% | 17  16% | 6  6% | 106  100% | 26 |
| Extended carcass hanging time | 55  54% | 35  35% | 11  11% | 101  100% | 31 |
| Dry Aging | 34  35% | 45  46% | 18  19% | 97  100% | 35 |
| Placing your label on meat packages | 38  37% | 34  33% | 31  30% | 103  100% | 29 |
| Delivery of meat/carcass to next destination | 27  27% | 39  38% | 36  35% | 102  100% | 30 |
| Smoking and curing | 15  16% | 46  48% | 35  36% | 96  100% | 36 |
| Organic slaughter & processing | 9  9% | 35  35% | 57  56% | 101  100% | 31 |
| Animal pick up for transport to slaughter | 5  5% | 28  27% | 70  68% | 103  100% | 29 |
| Kosher slaughter | 3  3% | 21  22% | 71  75% | 95  100% | 37 |

This survey was conducted by UC Cooperative Extension in Solano County with funding from a USDA Rural Business Enterprise Grant (RBEG). The High Sierra Resource Conservation and Development District provided grant administration and organized a committee of interested stakeholders to serve as advisors on this and other RBEG grant sub-projects. Many thanks go to Sarah O’Neill for her diligent efforts in mailing the survey and data compilation.