

NC CHOICES TECHNICAL ASSISTANCE TRAINING MANUAL

ADVANCING LOCAL AND NICHE MEAT SUPPLY CHAINS



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Authors: Lauren Gwin, Casey McKissick, Sarah Blacklin
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About the Authors

Lauren Gwin is the Director of the Niche Meat Processor Assistance Network and Associate Director of the Oregon State University Center for Small Farms & Community Food Systems. NMPAN: www.nichemeatprocessing.org

Casey McKissick is the Co-director of NC Choices.
Sarah Blacklin is the Co-director of NC Choices.

NC Choices advances local meat supply chains by providing networking opportunities, educational programming and technical assistance for producers, meat processors, buyers, and food professionals. NC Choices is a program of the Center for Environmental Farming Systems (CEFS), a partnership of NC State University, NC A&T State University, and the NC Department of Agriculture and Consumer Services. <http://ncchoices.ces.ncsu.edu>

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Table of Contents

Introduction 1

Strategies and Tools for Small-Scale Processors

1 HACCP in the Cloud..... 4

2 Improving Communication with Customers 6

3 Addressing Inefficiencies and Bottlenecks 8

4 Spreadsheets for Sausage Recipes 12

5 Order and Inventory Management..... 15

6 Adding Ready-to-Eat to Your Business 18

General Guidance for Processors and Technical Assistance Providers

7 Peer Learning Exchanges 32

8 Guidance for Starting a Local Butcher Shop 35

9 Guidance on Packaging Equipment..... 39

10 Tips for Technical Assistance Providers 42

Conclusion 44



Introduction

Rising consumer demand for local meat and poultry has led to increased demand for local processors with a range of skills and services. NC Choices, an initiative of the Center for Environmental Farming Systems (CEFS) at North Carolina State University, has long recognized the importance of supporting small-scale processors. While processing is often said to be a critical bottleneck for the growth of the local meat and poultry sector – and the construction of new facilities the solution – insufficient attention has been given to building the capacity of existing processors.

To address this, NC Choices began in 2011 to offer direct technical assistance to small-scale processors and in the following year expanded this effort with funding from the North Carolina Rural Center. The twin goals of the Small-Scale Meat Processors Business and Technical Assistance Project were to improve the quality and quantity of processing services available to the state's livestock producers and to enhance the economic viability of producers and processors.

This manual describes information, strategies, and recommendations developed during this project that may be useful to other processors around the country. The manual is intended for processors and also individuals and organizations that already or would like to provide similar technical support to processors in their regions.

Participating processors implemented the approaches described here over the three-year period. NC Choices will continue to work with the processors to track results past the project end date to gauge the long-term effect of changes they made.

What is in this Manual?

This introduction provides background on the Small-Scale Meat Processors Business and Technical Assistance Project. Subsequent chapters are organized into two sections, based on their primary intended audience. The first section, written primarily for processors, offers strategies and tools developed in the course of the project for and with participating processors. These include “big picture” topics like finding and addressing bottlenecks and “small shifts” like a spreadsheet for sausage recipes that reduces errors for different batch sizes.

The second section includes more general guidance that will be particularly useful for technical assistance providers, although processors may certainly benefit.



NC Choices advances local and niche meat supply chains by providing networking opportunities, educational programming, and technical assistance for producers, meat processors, buyers, and food professionals. NC Choices is a program of the Center for Environmental Farming Systems (CEFS), a partnership of NC State University, NC A&T State University and the NC Department of Agriculture and Consumer Services.



Each chapter is based on the real-life challenges and experiences of processors who participated in this project.

Background on the Project

NC Choices, a program within the Center for Environmental Farming Systems, supports the growth of the niche meat industry in North Carolina and the surrounding region. In 2011, NC Choices began providing business development and technical assistance to small-scale meat processors to upgrade their services, starting with a small, state-inspected processor in the foothills region of North Carolina. With NC Choices' help, the plant upgraded to a computer-based order management system, gained USDA inspection, and developed a customer manual to improve communication and increase efficiency, especially regarding cut sheets and orders.



Photo credit: Stephen Bailey, Heifer International

Based on this initial success and with funding support from the North Carolina Rural Center, NC Choices expanded this effort and launched the Small-Scale Meat Processors Business and Technical Assistance Project in 2012. Participants were selected through an application process open to all small-scale meat processors in the state. NC Choices visited processing facilities across the state in advance of the application period to establish relationships and encourage applications. Eight projects were selected. Five completed the program successfully, including four of the state's heavily used, commercial scale, inspected meat processors that provide processing for local farmers and one new, farmer-owned, retail butcher shop in rural North Carolina.

Participants sought technical assistance to increase plant efficiency, expand plant capacity and capability, and launch new enterprises within their existing businesses. NC Choices delivered technical assistance through workshops and trainings, one-on-one consultation, arranging exchanges with peer processors, and recruiting outside expertise as needed. Processors who successfully completed the project were awarded \$5,000 in matching funds to move their business development and technical assistance plans forward, including new business systems, operational procedures, and/or upgrades in equipment.

Participating Processors

- **Acre Station Meat Farm, Pinetown, NC:** Acre Station is a family-run business in eastern North Carolina, founded in 1977 by Ernest Huettman and now operated by his sons Richard and Ronnie Huettman. Acre Station is a USDA-inspected, red meat slaughter and processing business that handles pork, beef, sheep, and game. Services include fresh meat cuts and value-added processing. Acre Station processes for about 90 customers, including farmers and wholesale buyers.
- **Chaudry Halal Meats, Siler City, NC:** Chaudry Halal Meats is a family-run business in central North Carolina that has provided USDA-inspected, halal slaughter and fresh cut processing of beef, goat, and lamb for more than 15 years. In 2008, Chaudry added USDA-inspected poultry processing. Chaudry processes for about 150 customers, including both farmers and wholesale buyers.
- **Foothills Pilot Plant, Marion, NC:** Foothills Pilot Plant, LLC (FPP) is located in the foothills of western North Carolina and opened in January 2012 to serve independent poultry and rabbit farmers with USDA- and FDA-inspected processing. FPP processes chickens, turkeys, rabbits, and other specialty fowl, for more than 260 farmers.
- **Mays Meats, Taylorsville, NC:** Mays Meats is located in the foothills and has been in operation for more than 25 years. Mays is a USDA-inspected slaughter and processing facility, providing fresh cuts and fresh value-added products, and is the only certified organic processor in the state. Mays handles beef, pork, and lamb and processes for more than 200 farmers and wholesalers.
- **Rose Mountain Butcher Shoppe, Lansing, NC:** Rose Mountain Butcher Shoppe, a brand new business, opened in early 2014 in rural northwest North Carolina. Rose Mountain operates under county health inspection as a retail-exempt facility, sourcing whole hogs from their own farm in Ashe County, and also sources meat and other local products from a network of 56 farmers. Rose Mountain processes specialty sausage, fresh cuts, and fresh value added products and sells at the shop and soon online.

1 HACCP in the Cloud

This chapter describes steps one processor is taking to improve its recordkeeping related to regulatory compliance.

Foothills Pilot Plant is a very small, USDA-inspected poultry processing plant that processes for approximately 260 small-scale poultry farmers who sell into local markets. Recordkeeping was challenging: the plant was receiving at least one non-compliance report (NR) per week from the USDA inspector for minor paperwork infractions that had nothing to do with food safety. As plant manager Amanda Carter explains, NRs have an economic impact for both the processor and its customers. “USDA can shut me down for recordkeeping issues. Every day that I can’t work, it averages out to \$4,000 worth of retail product that can’t be produced.” That translates into delayed or lost revenue for farmers.

The paper based system appeared to be a key culprit. Employees were regularly trained but sometimes made mistakes. More training could not completely solve the problem: every plant has too much paper on the kill and processing floor, and it is very difficult to keep paperwork clean, orderly, and readable in that wet environment. Even inspectors occasionally lose paperwork.

With guidance and financial support from NC Choices, Foothills brought in an Internet Technology (IT) consultant to develop a cloud-based system for HACCP recordkeeping, to improve the efficiency of food safety recordkeeping, lower related costs, and ultimately provide better customer service. Foothills management believed that a technological solution, while not eliminating human error, would significantly alleviate problems. Like paper, tablet or handheld computers can be destroyed on the processing floor. But an electronic system moves data quickly to a safer place than paper on a clipboard. The software can also be designed to warn a user when data is entered outside of a standard range, which also prevents human error. For example, if an employee accidentally enters 83°F instead of 38°F for something that should be under 40°F, a warning pops up asking for confirmation, alerting the employee to the error so that he can fix the mistake. The software may also include the capacity to upload temperature probe data immediately into electronic forms, improving accuracy and saving staff the time needed to manually enter temperatures on paper.

Existing electronic records management programs are not designed or priced for very small plants like Foothills. As Carter explains, “What we want to create is a much smaller scale system that is mostly user-driven.”



Foothills Plant Manager Amanda Carter and NC Choices Co-director Casey McKissick tour the plant.

HACCP: Hazard Analysis Critical Control Point is a systematic approach to food safety, based on preventing, eliminating, or reducing biological, physical, and/or chemical hazards to acceptable levels. This is achieved by using validated (science-based) methods, and ongoing verification (recordkeeping that proves the processor took the necessary steps on time and correctly).

The cloud-based HACCP system is currently being designed and will be ready for launch and in-plant testing in the summer of 2014. Carter and the consultant decided on smart phones as the best way to access HACCP forms and databases (versus tablets, for example), because they are fairly inexpensive and easily replaced. Once the system is adequately field tested by Foothills, the consultant plans to make it available for other plants to use, potentially by early 2015.

Outcomes

Cloud-based financial recordkeeping has already allowed Carter to work off-site up to five hours daily, which she spends providing more on-farm technical assistance to her clients to improve management practices that affect carcass quality. Shifting HACCP recordkeeping to the cloud will increase her ability to do this. In addition, Carter predicts the following outcomes:

- Fewer recording mistakes and fewer non-compliance reports (NRs)
- Less management time required to fix mistakes and respond to NRs;
- Less processing time lost;
- More time available for pro-active improvement of plant operations;
- Efficiency gains that will allow Foothills to hire two more full time employees for a total of 14 employees by end of 2014.

The image shows a handwritten HACCP form titled "FOOTHILLS PILOT PLANT" and "PRESHIPMINE REVIEW CHECKLIST". The form is dated 3-20-14 and lists several growers with their names and batch numbers, along with checkmarks indicating compliance. The form also includes checkboxes for HACCP logs and a signature line.

Grower Name & Batch #	Inspector	Compliance
1401 TO	Brian K... ✓	
1412-14	Brian K... ✓	
1413-14	Melissa S... ✓	
1414-14	Gregory O... ✓	
1415-14	Lois M... ✓	
1416-14	Lois H... ✓	
1417-14	Elizabeth V... ✓	
1417-14	Gregory M... ✓	
1418-14	Melanie T... ✓	

Checklist items:

- CCP-1: Processing log
- CCP-2a: Carcass Temperature log
- CCP-2b: Washroom Temperature log
- Processing Temperature Log checked per order

Signature: [Signature]

Records Reviewed By: [Signature] Date: 3/20/14 Time: 2:04

As Carter explains, "A plant that is actively seeking to improve their food safety system and their efficiency without sacrificing their quality needs to consider a system like this."

"The whole niche-meat experience is a reinvention of tools! When I am working with people in poultry processing, I always tell them to be prepared to tear your equipment down at least twice and replace everything because none of it was designed for your reality.

"I love it because if there were no problems to solve, there'd be no challenge. I am very excited about the tools I am creating with John and look forward to applying them in other scenarios. I really think it will improve how our data flows and make it so much easier to focus on product quality.

"We would never have been able to work towards designing and implementing such a software management tool without NC Choices' assistance." — Amanda Carter

Electronic recordkeeping is acceptable. 9 CFR 417.5(d): "Records maintained on computers. The use of records maintained on computers is acceptable, provided that appropriate controls are implemented to ensure the integrity of the electronic data and signatures."

2

Improving Communication with Customers

The Foothills Experience: Customer Surveys

The Foothills Pilot Plant has set up two ways to gather customer feedback: an annual survey and a customer comment box on its website. Customers have not yet used the comment box but they have responded to the annual survey, done twice so far. The first survey provided written evidence the plant manager needed to make some staffing changes to improve customer service. The second survey included an economic assessment to gauge the value of the new plant for the region's poultry farmers.

The plant received useful suggestions about packaging and quickly responded with improvements.

Foothills trains its staff to provide good customer service, to make sure customers are satisfied. "Customer service starts when you walk up to our door," plant manager Amanda Carter explains. "So my live animal handlers are responsible for customer service in a really big way because they are going to put your animal on a road to death. The gentleman who does the loading of final product at the back door is another big customer service piece, because people are traveling three, four, five hours with coolers full of chicken."

Effective working relationships require effective communication. During the course of this project, two specific strategies were used to improve producer-processor communication: customer surveys and customer manuals. NC Choices developed templates for both, with guidance to use them effectively.

Customer Surveys

Customer surveys are a simple way that processors can gather customer satisfaction data. Plant managers may elect to conduct surveys annually or bi-annually and/or make the surveys available to their customers all the time to gather feedback on an ongoing basis. Conducting surveys in multiple ways will increase the number of respondents. Offering paper copies at the plant will reach customers waiting to pick up product, as well as those less digitally inclined. Sending a link out by email with a simple online version will reach customers who prefer to complete surveys on their own time. Some plant managers offer a small discount on processing for a completed survey.

Here is an example of a short and concise survey used by one processor who participated in this project. This survey was offered as an email, web-link, and paper copy available in the plant's waiting room.

Customer Satisfaction Survey

Piedmont Meat Processing is conducting a customer survey to help us improve the services we provide our customers. We are working to improve our customer service and product offerings and hope you will answer a few questions about your experience. This survey should only take you about 10 minutes. You can fill it out here [provide weblink], respond directly to this email, or pick up a paper survey next time you are in the plant.

1. What services did you receive in the past 6 months? (check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Beef cattle kill and chill | <input type="checkbox"/> Meat cuts (custom) |
| <input type="checkbox"/> Hogs kill and chill | <input type="checkbox"/> Packaging (standard) |
| <input type="checkbox"/> Lamb kill and chill | <input type="checkbox"/> Packaging (custom) |
| <input type="checkbox"/> Goats kill and chill | <input type="checkbox"/> Boxed for fresh pick-up |
| <input type="checkbox"/> Meat cuts (standard) | <input type="checkbox"/> Boxed and frozen |

2. How would you rate the quality of service you have received (please circle one):

Excellent Good Fair Poor

Please explain your rating:

3. What suggestions do you have to improve our current customer service?
4. What additional services, if any, would you like to see us offer?

Tips for Effective Customer Surveys:

1. Keep it simple, or you won't send it and they won't respond: only a few questions, multiple choice answers, perhaps with space for comments.
2. Make sure you are willing to hear the answers.
3. Don't ask too often. Some businesses survey their customers after each transaction. But that requires enough administrative help not only to send the survey (which could be automated) but to read and digest the answers.

Customer Manuals

Like any business that provides services, processors need to communicate clearly with their customers. Many processors spend a great deal of time on the phone or in person explaining the basics: what services they offer and at what cost, how to schedule, pick-up times, how to order cuts, and so forth. Having a customer manual to hand out to current and potential customers can save valuable phone and email time and help avoid miscommunication.

In 2011, NC Choices worked with a very small plant to assemble a customer manual. Once it proved effective at saving the manager valuable time, it was turned into a template for other plants to use.

You can find the template, instructions, and a webinar about customer manuals here: www.extension.org/pages/67369/customer-manuals-for-small-meat-processors.

Mays Meats Experience: Customer Manuals

Misty Dyson, Scheduler and HACCP Coordinator at Mays Meats, was spending a lot of time on the phone, answering basic questions over and over. She really needed that time to do everything else on her plate. When Dyson saw the NC Choices template, she immediately jumped on the opportunity to have assistance creating her own.

The template was used as a starting point to fill in Mays-specific information, including cut sheets and pricing. Dyson posted the manual as a pdf on the plant's website and made printed copies available. "Our customers love it," Dyson says, adding that she expects it will soon free up more of her time to focus on other needed work.

3

Addressing Inefficiencies and Bottlenecks

A Note on Terms

Inefficiency, bottleneck, and constraint are three words we heard often to describe, in general, “something that isn’t working as well as it could.”

- **Inefficiency**, n.: the lack of ability to do something or produce something without wasting materials, time, or energy.
- **Bottleneck**, n.: a place or stage in a process where progress is impeded; a point of congestion in a system that occurs when workloads arrive at a given point more quickly than that point can handle them.
- **Constraint**, n.: something that limits or restricts someone or something.
- **“Bottleneck” versus “constraint”** according to the Center for Industrial Research and Service at Iowa State University: www.ciras.iastate.edu/library/toc/terminology.asp.

Several processors who participated in the Small Scale Meat Processors Business and Technical Assistance Project asked for help identifying ways to increase efficiency and open up bottlenecks. NC Choices brought in a consultant with this expertise to visit two plants and recommend specific changes. The guidance in this chapter is drawn from those visits, the consultant’s general recommendations, and observations and advice from other experts in this field.

Small meat processors, like all businesses, need to make the best use of their time and resources to be profitable. Few companies – of any type – are actually fully efficient and bottleneck-free. The challenge is finding enough time and mental energy to step back from daily operations and look at your plant with a critical eye. By finding and working on these problems, you can increase revenue, reduce costs, or even do both and thereby improve your bottom line.

Here is a list of common “hot spots” to review in your plant. The list was developed by a former processor/distributor who now consults with small processors on plant efficiency. These suggestions are based on his personal experience as a processor, his observations of other facilities, and additional ideas from other small plant operators and analysts.

These are ideas, not cure-alls. Only you can decide what is best for your business.

Common Areas to Improve Efficiency and Productivity in Small Processing Plants

Physical Layout and Set Up

Employees, equipment, supplies, materials, and other inputs all need to be ready before production begins. Your physical layout should be prepared to handle and process your outputs through the proper channels. If finished goods start stacking up and you’re not prepared to move them out, bottlenecks will occur. If employees have to leave their stations often to sharpen knives, grab cut sheets, or retrieve additional product or packaging materials, that indicates inadequate set up prior to production. If employees have to do much walking and moving product around, that takes time away from their specified tasks. Downtime at stations can be a good time to get set up for additional work coming down the line.

Staff can use a pre-operation checklist for each station to ensure set up is adequate. Managers may or may not require these to be reviewed, but staff will benefit from getting used to starting each shift this way. Mise en place checklists are often used to report inventory shortages to staff responsible for procurement. If the packaging station manager performs the pre-operation checklist and sees that the 8”x12” vacuum bags are low, or below a certain agreed upon “threshold,” he or she can report this to procurement for reordering before supplies run out.

For more on this topic, read this short article: www.extension.org/pages/69085/processors:-have-you-tried-scheduled-retail-replenishment.

Steady Flow of Product

Processors need a steady flow of product coming in to process. It's important to make sure the next carcass, side, or primal is on deck and ready for processing with minimal effort on the part of the first worker who will handle it. Whoever is in charge of procurement needs to understand the need for steady, committed flow. For example, if the raw product doesn't normally arrive until midday on Tuesday and Thursday, consider ordering additional product to make it through Tuesday morning instead of waiting for a truck to arrive. Sometimes simple supply issues can be solved with better scheduling. Find vendors that deliver consistently. And if your "vendors" are producers delivering livestock for slaughter at your plant, you need a robust scheduling system to keep a steady flow of livestock coming.

On the other hand, simply assuring a steady flow of product may not increase overall productivity if specific constraints or bottlenecks are not addressed.

Finally, remember Murphy's Law: what can go wrong will go wrong at some point. What is most important is that plants have systems in place to help overcome the challenges.

For more on this, see Goldratt's "Theory of Constraints" applied to meat processing here: www.extension.org/pages/69289/strategies-to-increase-throughput.

Idle Hands and Idle Machines

Plant managers inherently want workers and equipment to be busy. If they are stopped for too long, their true costs can negate the revenue they create. Plant managers need to maintain a high level of efficiency while ensuring employees enjoy an acceptable level of job satisfaction. When the shift completes work early, managers can be ready with deep cleaning tasks and new projects to ensure workers get their full shift time.

However, making people work and keeping machines humming all the time will not necessarily move more product through your plant and can be counterproductive. Managers who make everyone work all the time are not necessarily promoting efficiency. The work areas to keep as busy as possible are those that affect the rest of the plant. In fact, if you meet your daily production goals early, why not reward employees – and build valuable morale – by letting them out early while still paying them for the hours they expected to work? Everyone wins.

For more on daily production goals, see: www.extension.org/pages/70497/cost-analysis-are-you-making-money.

Bottlenecks

A bottleneck, as noted earlier, is a point in process flow that limits speed and productivity: products get backed up because they can't move as quickly *through* that area as they move *to* that area. Finding and opening a bottleneck often creates a new one. One approach is to start at the end of the process, where finished goods leave the plant, and work back to the beginning, looking for places where product is "stuck." Measuring output can help determine how much more product needs to be processed to meet production goals.

A processor's perspective:

"Inefficiencies are different from constraints. Constraints stop you from moving forward. Once we started programming to constraints, we really pushed forward. Lorentz Meats was constrained by our smokehouses. If you had them running 24/7, it didn't matter how much our sausage guys dilly-dallied between batches: if our smokehouses were full, that was all we could do. That changes the way you look at your business, and where you put your best people. Everyone doesn't have to be busting all day long. As long as the constraint is busy – for us, our smokehouses – you're at full speed. That's revolutionary."

– Mike Lorentz, Lorentz Meats

For examples of robust scheduling systems, read the case studies of Smucker's Meats and Island Grown Farmers Coop, available here: www.extension.org/pages/15735/niche-meat-processor-case-studies.

It is also possible to measure and analyze too much. Instead of a time study, this approach is useful:

4. Ask management where the bottleneck is.
5. Ask employees where the bottleneck is.
6. If management and employees agree, they are likely correct.
7. If they don't agree, choose one suggested place as the potential bottleneck and start watching. You will quickly see where the real bottleneck is and can then respond to it.

New directives and notices for USDA's Food Safety and Inspection Service FSIS can be found here: www.fsis.usda.gov/wps/portal/fsis/topics/regulations

Housekeeping

Keeping working areas free of debris, clutter, or product build-up keeps employees focused on the job at hand and maintains a safe work environment. Flow of product should not be impeded by poor housekeeping. Employees should be able to move products through production areas easily and without physical barriers: keep aisles clean and free of clutter.

Workforce and Retention

Communicate with your employees properly about expectations and give them the tools to do their job effectively and efficiently. Teach them the rules of the ball game and give them a bat, ball, and glove. If they don't develop into good team players, make your cuts and recruit again. Teaching the rules of the game means making your expectations clear, both for the job position and for the tasks of the day. How many head must be processed by noon or by the end of the day? What range of carcass yields are your cutters expected to achieve? Give them standards and goals to achieve and be ready to evaluate them on their performance, providing retraining and encouragement when appropriate

Always be on the lookout for quality employees. Even if your plant is fully staffed, don't forget that there may be better employees who want the job. Don't pass up an amazing hire because you are content with a full but mediocre staff. Identify your best employees and use their characteristics as a guideline for your next hire.

Remember, the passion that you have to make this industry your livelihood may not be necessarily what wakes your employees up every morning and gets them to work. Most employees are looking for a satisfying (or even just an easy) way to secure a paycheck. Competitive wages can pay off in the long run by increasing employee retention. Paying minimum wage may save money in the short term but may create a revolving door in and out of your facility. Can you do the same or better work with fewer, high quality employees?

Effective plant managers pay well and engage their employees with meaningful work that makes them feel valued. They create and cultivate a culture of "work hard, play hard." For example, one processor involved in this project maintains a soccer field next to the plant for the crew to play at the lunch break, in "kill floor versus cut floor" matches. The games build morale and energy before they return to work.

Priorities

Set your priorities and stick to them. If you make products or work on projects that aren't high priorities, you take time away from the most important things for your business. For example, when sales reps do not communicate and cancel orders in a timely manner, you may spend time on product that will not ship immediately instead of orders that will, and you end up sitting on product that still needs a buyer.

Priorities will differ for every processor. Some focus on customer service for the highest volume or most profitable customers and are less concerned about bottlenecks than quality and service for their anchor customers. Other processors prefer to treat every customer equally and may focus more on overall efficiency by finding and eliminating bottlenecks to maximize the efficiency of the whole process, regardless of whose product is on the floor. Only the processor and employees can determine the plant's priorities.

Breakdowns

Plant managers can't predict when problems will arise, but they can anticipate potential problems and find solutions before they grind production to a halt. A solid preventative maintenance program is not only essential to food safety but to production efficiency. Knowing what equipment typically malfunctions and what repair parts you need to have on hand is essential to minimizing the effect a breakdown will have on production if problems arise. When purchasing used equipment, it is important to factor in the cost of repairs that may be needed sooner than if new equipment had been purchased. Some plants have an employee who doubles as an equipment technician to handle as many repairs as possible in-house.

For more on breaking the entire process into segments to measure where time is being spent and potentially wasted, see www.isixsigma.com/methodology/business-process-management-bpm/preparing-measure-process-work-time-study/.

Regulations

By knowing your products and your processes intimately, you are the number one source of knowledge and authority about both. By knowing the regulations inside and out, you can be proactive rather than reactive and minimize the time you need to respond to inspectors' questions. Regulations are not static: keep up with directives to stay current.

Over-complication

Know your customers and their specifications. When in doubt, communicate! Farmer-owned products require a great deal of attention to avoid co-mingling with another customer's products. Work with your farmer customers to develop approaches that will increase profitability for both of you. For example, don't assume that customers prefer finished items that require more processing such as boneless steaks and roasts. You can educate your customers about the benefits of selling bone-in product. Finding ways to simplify processing and packaging will lead to a less chaotic workday and greater profitability.

4 Spreadsheets for Sausage Recipes

Sometimes a relatively small and simple tool can make life easier in a small processing facility. This chapter describes one such tool: a simple spreadsheet that generates custom sausage recipes based on batch size, reducing the chance of human error and lost product.

Offering custom sausage mixes can create a competitive advantage for processors whose farmer-customers want to differentiate their products in the marketplace. Most processors in North Carolina rely on pre-blended spice mixes because mixing a producer's own specialty sausage recipe is time consuming and can be a logistical headache. With custom recipes, processors must keep unique ingredients separated and communicate numerous different recipes to staff with individual batch calculations, increasing the chance of error. Yet when a processor keeps it simple by using only pre-blended mixes, all the "spicy Italian sausage" tastes about the same, regardless of the source farm. Custom spice mixes also tend to be less expensive than pre-blended mixes. Some processors allow customers to bring their own proprietary mixes, pre-blended, but this requires the producer to work with a spice mix co-packer or commercial kitchen to pre-blend their mix which may require large minimum orders which is not feasible for many small farmers.

The sausage spreadsheet designed here was created by Smucker's Meats (see Chapter 5 for more on Smucker's). It is designed for small USDA- and state-inspected plants interested in creating their own specialty recipes as a way to differentiate their sausage flavor offerings from other plants offering commercial pre-mix blends, without using customers' individual recipes. This spreadsheet may also be useful for small retail shops who want to make their specialty sausages more consistent while tracking costs.



Photo credit: Clicks Photography

Processors who wish to make custom sausage batches need to know how to test and adjust recipes, how to cost out ingredients, and how to make the recipes easy enough for staff on the floor to follow even when mixing several recipes in quick succession. The sausage spreadsheet addresses these questions with simple formulations.

The processor initially enters the ingredients and costs for each ingredient, and then the recipe based on a standardized batch size. Once this information is entered, the spreadsheet is ready to use for specific batches: the processor enters the batch size by weight, and the spreadsheet generates a recipe with the correct ingredient measurements by weight.

Custom recipes are easy for staff to produce since the spreadsheet automatically generates the total weight of each ingredient needed for a given batch size, reducing the likelihood of miscalculation. In addition, the plant manager or sausage maker can change and adjust ingredients and ratios without the staff on the floor having to memorize or keep up with changing recipes: they simply follow the list of ingredients and weight measurements for each batch.

	A	B	C
1	Sausage Formulations		
2	Name	Weight	Cost
3	Sausage 1	10.00	0.02
4	Salt	0.15	0.12
5	Black Pepper	0.01	0.05
6			
7	Sausage 2	10.00	0.09
8	Sugar	2.00	0.92
9	S2 Ing2		0.00
10	S2 Ing3		0.00
11	S2 Ing4		0.00
12	S2 Ing5		0.00
13	S2 Ing6		0.00
14			

Formulation page example

	A	B	C	D
1	Ingredient Cost Sheet			
2	Name	Total Cost	Total Wt	Price/lb
3	Black Pepper	\$5.00	1.00	\$5.00
4	Salt	\$63.00	80.00	\$0.79
5	Sugar	\$23.00	50	\$0.46
6				
7				

Ingredient page example

Using this spreadsheet requires a basic understanding of Excel, including writing simple formulas that include cells from a linked worksheet.

1. Set up the spreadsheet for your recipes

- a. In the “Ingredients” tab, enter ingredients and what they cost – you can update this list when ingredient prices change or you add or remove ingredients.
- b. In the “Formulations” tab, enter the formulation for each type of sausage, based on a ten-pound batch by manually linking the cost line for each ingredient in a formulation back to the appropriate cell on the ingredient sheet.
 - i. Type the ingredient’s name into the “name” column.
 - ii. Type the weight of that ingredient for a 10 pound batch into the “weight” column.
 - iii. Manually link the cost line for that ingredient back to the appropriate cell in the “Ingredients” tab: when you highlight the cost cell for that ingredient, you’ll see the formula. Adjust the formula so that it links back to the specific cost cell for that ingredient in the Ingredients tab.
 - iv. Example 1: in the template, the formulation for Sausage 1 includes salt and black pepper. The cost cell for salt has the formula “=SUM(B4*Ingredients!D4)” because the salt’s cost is in the Ingredients tab, cell D4.
 - v. Example 2: in the images on the right, the first ingredient for Sausage 2 is sugar, 2 lbs per 10 lb batch of sausage. The cost cell was adjusted to read “=SUM(B8*Ingredients!D10)” because the cost of sugar is in cell D10 of the Ingredients tab.

2. When you are ready to make a specific batch of sausage

- a. In the tab corresponding to the recipe you are using, enter the batch size by weight.
- b. The spreadsheet will automatically calculate how much of which ingredient to use.
- c. Print out the page and hand it to your sausage maker.

Download the spreadsheet, with detailed instructions, here: www.extension.org:80/pages/70608/sausage-formulation-spreadsheet.

5 Order and Inventory Management

Small meat processors that provide a variety of processing services for multiple farmers and ranchers need order and inventory management systems that are affordable and practical while providing the information their customers need to run successful meat businesses. This information includes a list of per-package weights, total weight per box, tagging and traceability of their animal throughout slaughter and processing, clear and efficient cut sheets, and effective invoicing that reflects the services performed. Order and inventory management systems currently on the market have the desired functionality but are designed for larger plants and are typically not affordable for small and very small processors.

MeatWurks is a software program created by Smucker's Meats to solve this problem. Smucker's is a small, family-owned, USDA-inspected slaughter, fabrication, and further-processing plant for red meat, located in Pennsylvania. Smucker's handles 60 to 70 beef and 40 to 50 hogs per week and processes for about 200 farmers. Of these, 10 to 15% are "anchor customers" who bring 10 to 15 head at a time on a weekly or monthly basis. The rest bring one or two head at a time, on a monthly or annual basis. Smucker's customers sell meat through multiple direct and wholesale market channels. Learn more about Smucker's here: www.extension.org/pages/15737/smuckers-meats.

NC Choices is working with Smucker's to make MeatWurks available to other small processors, starting with a pilot project with Acre Station Meat Farm.



Mike Smucker, Sarah Blacklin, and Richard Huettman discuss MeatWurks.

“Other programs exist that cover every conceivable need... MeatWurks fills the space between nothing and these more complex, expensive systems.”
— Mike Smucker

Learn more about MeatWurks in a 2010 Niche Meat Processor Assistance Network webinar, “Order and Inventory Management.” www.extension.org/pages/27531/order-inventory-management-webinar. The “back end” of the program has been reorganized since then, Mike Smucker notes, but the “front end” functionality is the same.

Sophisticated order and inventory management software systems are commercially available, but MeatWurks is a valuable bridge for processors new to computerized systems. As Mike Smucker explains, “our niche is the small meat processor who is getting started with computer-based management systems and needs a complete program that covers the bases while they grow. I know other programs exist that cover every conceivable recordkeeping need. My hope is that Meatwurks fills the space between nothing and these more complex, expensive systems. And MeatWurks is complete from schedule to statement. Our initial goal was to have a marketable product in the \$3000 to \$5000 range, as a price point feasible for most processors our size and smaller.”

MeatWurks Components

MeatWurks combines multiple aspects of a small processing business into one software program:

- Slaughter schedule
- Customer database
- Harvest reports
- Cutting orders
- Invoicing
- Accounts receivable
- Bank deposits (MeatWurks can be linked to the plant’s bookkeeping software)

Having all of this data within one system simplifies and streamlines operations and reduces errors. For example, a customer’s cutting order is first entered into a standard order form. That information is then entered into the cutting order database and linked with that customer’s record in the customer database. The day that carcass will be cut, specific cut sheets for that carcass are printed out for the cutting department. The sheets show only the cuts that were ordered instead of every possible cut, keeping the sheet less cluttered and reducing potential mistakes.

MeatWurks is a self-contained system, but Smucker’s has also supplemented it with off-the-shelf software. For example, harvest data would normally be entered into MeatWurks manually, at the end of the day; harvest reports are then immediately emailed to customers. Smucker’s added VistaTrac to allow harvest data to be entered into MeatWurks directly from the kill floor; the software program and two waterproof touch-screen stations cost about \$20,000. However, having VistaTrac is not at all necessary to run MeatWurks with its full functionality.



Richard Huettman, Acre Station Meat Farm

Sharing Innovation

NC Choices is working with Smucker's Meats to put MeatWurks "in the box" for other plants to adopt, beginning with Acre Station Meat Farm as a pilot project. Smucker's will sell the software to Acre Station (rather than house it on a remote server and sell a license or subscription) and is helping Acre Station determine its specific hardware needs. For example, to run the program for four or five users, Acre Station is not likely to need a dedicated server but instead a computer with more memory than the standard off-the-shelf business model. Smucker's expects the software to cost \$3,000 to \$5,000; the hardware cost for Acre Station and other processors will depend on what they already have in-house.

Based on Acre Station's experience, NC Choices will work with Smucker's to write a case study and MeatWurks manual to facilitate adoption by other plants.



MeatWurks home screen

6

Adding Ready-to-Eat to Your Business

This business planning template is based on an actual plan prepared for Acre Station Meat Farm during the project. Acre Station wanted to expand its physical footprint to allow for more RTE production. As the plan was being completed, Acre Station's business priorities shifted when a new, large-volume buyer approached the company. Acre Station chose to focus on meeting this new customer's needs, which did not require physical expansion, and the new revenue generated will help fund the expansion at a later date.

For many small-scale meat companies, manufacturing fully-cooked, ready-to-eat (RTE) meat products is considered the Holy Grail of meat processing. In our modern society, convenience is in high demand. Fully cooked meats including pre-sliced sandwich meats, fully-cooked smoked sausage, carnitas, barbecue, hot dogs, and beef jerky all command premium pricing for their ease of use and time savings. RTE meat products can increase the value of processing services, maximize full use of the carcass, and increase profits for processors and farm-based meat producers alike.

Preparing a business plan for expansion into RTE is essential for two reasons. First, it helps the company owners and management establish a clear purpose for the expansion and forecast operations from a cash flow standpoint. Establishing realistic estimates for investment costs, revenues and expenses will help evaluate whether the endeavor will be profitable. If so, the company establishes a timeline with benchmark goals to achieve long-term profitability. Second, a written business plan is necessary to secure bank or investor financing. It shows potential lenders/investors that the plan is solid and all aspects of the new activity have been thought through carefully.

Many parts of an RTE expansion plan are common to any business plan. A big difference is that any aspiring RTE business is likely to be an existing processor with experience processing fresh or value added cuts. Many also have experience with slaughterhouse operations.

An individual processor's business plan will be tailored to a defined set of RTE products. This template is conceptual, to be modified for a specific processor. There are many types of RTE products, and a single processor is unlikely to produce more than a handful of them.

This plan includes the following RTE products:

- Cooked chopped pork barbecue
- Beef sticks
- Smoked sausage
- Sliced ham

Small-scale meat processors often generate most of their revenue from fee-for-service processing, priced by pound of finished product, for meat producers who then sell the product into restaurant, retail, or wholesale channels. While it is not uncommon for plants to have their own house brand, this business plan focuses on RTE expansion as a fee-for-service model.

Plan Outline

An RTE business plan should include the following sections.

1. Overview
2. Company History
3. The Market for Ready-To-Eat Meat Products
4. RTE Products to be manufactured
5. Competition
6. Barriers to Entry
7. Development Plan
8. Personnel Plan
9. Year One Revenue and Expense Analysis
10. Five-Year Pro-Forma Profit and Loss Projections
11. Attachments of supporting documents

The following discussion of each section is designed to help you address details of your business objectives. It will help you internalize the plan as well as develop a written plan for outside review. **Remember that a business plan exists both to help you forecast operations and to explain the new business activity to potential investors and lenders.**



1. Overview

The overview is essentially an executive summary of the entire business plan. It should be short, one page or less, but can be longer if necessary. The overview will be the first thing a bank lender or potential investor will read, and it will capture the most important facts about the RTE business: rationale for expansion into RTE, a short description of products and demand for those products, total cost of development, estimated volume and value of production, and long-term business profitability.

The Overview should be written *after* all other sections of the plan are complete.

2. Company History

The company history provides a short introduction to the existing business. Some questions to address in this section include:

- Year the company was founded
- Ownership and management structure
- Type of business (e.g., Corporation, LLC, sole proprietorship)
- Business location
- Current services
- Number and types of clients using these services
- Volume and value of production (number of head or pounds of meat currently processed)
- Number of employees
- Description of current facility infrastructure (square feet, types of processing rooms, capital invested to date)
- Current level of profitability from existing operations

This section should ultimately answer one basic question: is the company established and experienced enough to take on RTE successfully? In other words, is the company ready for ready-to-eat?



3. The Market Ready-To-Eat Meat Products

This section describes market demand for the types of RTE products to be manufactured. Some questions to be addressed include the following:

- a. Who wants RTE products? Assuming this is a fee-for-service operation, who are the existing or potential clients that will pay the company to fabricate the products? How will they sell these products and, ultimately, who are the consumers who will purchase them?
- b. What is the proof for (a)? Written statements of commitment from clients are useful here, and offers for contracts to fabricate are ideal. (Both can be included in the supporting documents section). If these are not available, some description of clients' sales channels for RTE is recommended. For example, if a client currently distributes uncooked meat products to a supermarket chain, and that chain now wants cooked barbecue for their hot bars, describe the number of stores where the barbecue will be sold and the estimated pounds to be purchased by each location on a weekly or annual basis.
- c. What are current trends in RTE consumption? Trade journals and other market research reports can indicate the overall market growth potential for RTE products. Per-capita consumption trends for such items as fully cooked hot dogs may help justify RTE plans to a bank lender.
- d. How much of each RTE product do you intend to fabricate and sell? An estimate of current, quantified annual demand would be very helpful, along with a statement of estimated growth over a three to five year period.

4. Competitive Position

This section addresses market competition and should show how the company can penetrate a market that is either not yet served or (more likely) underserved by existing suppliers. Who else in the market either makes RTE or could be a competitor? Name the competitors and describe their level of penetration in RTE markets. Generally these competitors are other existing small meat processors in the geographic area or large branded meat companies.

Small-scale meat processors will never be able to compete head-to-head on price with the large, vertically integrated meat companies that produce the majority of the nation's meat supply. Small processors must instead compete on what makes their products special. This section should highlight what differentiates this company's products from the competition. Examples include animal welfare and organic certifications, having clients known for their sustainable, local, or all-natural products, and providing niche products – for example, cooked, chopped, pork barbecue – that large companies do not offer. This section honestly assesses the level of competition while explaining why a market opportunity exists.

5. Barriers to Entry and Threats to Success

An honest acknowledgement of barriers to entry and subsequent threats to business success is part of good business planning. Barriers to entry can be positives or negatives, depending on skills, experience, and existing infrastructure. This section should demonstrate why the business will be able to overcome barriers to entry in a way that will ultimately provide a competitive edge over others who want to enter the RTE market.

As a highly regulated, capital-intensive industry, meat processing has some very high barriers to entry. Barriers may include:

- Regulatory environment: USDA FSIS inspection of RTE products is very thorough, because of the potential food safety dangers. Writing and maintaining a good HACCP plan, rigorous pathogen testing, and knowledge of sanitary operating procedures are crucial for successful operations.
- Capital costs: new RTE infrastructure – construction, renovation, and equipment acquisition and installation – can cost tens to hundreds of thousands of dollars.
- Location suitability and availability: Meat processing, especially when coupled with animal slaughter, is not welcome in most residential or retail areas. Most plants require water and sewer service and 3-phase power. Natural gas access is preferred. Some municipal governments have moratoriums on new meat processing facilities.

Potential threats may include competitors taking market share, penalties and legal action due to foodborne outbreaks, product recalls, producers going elsewhere, and other events that may slow down or halt a business.

6. RTE Products and Pricing

This section describes each type of RTE product that will be produced. This template focuses on cooked, chopped pork barbecue, hot dogs, beef sticks, and sliced ham.

Include a full paragraph for each product, answering the following questions:

- a. What raw materials are needed for the product? Example: pork shoulders and picnics can be used to make barbecue. How many pounds of raw materials will yield one pound of finished barbecue? For this product, the shrink from cooking may be 50%, meaning two pounds of raw pork will yield one pound of cooked barbecue. For smoked sausages, describe the cuts and trim to be used in the manufacturing process, as well as any filler that will be used. Will the sausages be produced as a “natural, uncured” product, or will Sodium Nitrite be used? If both, provide recipes and pricing for both. If the process allows the use of trim that would otherwise go to less valuable products, describe how the process will maximize yield from the whole carcass. Use best judgment regarding target customers for the processing services and final consumers of the product.
- b. What is the specific process for manufacture of RTE products? Describe each stage of production from basic raw material to the finished packaged product. What types of equipment will be needed? How many personnel will be involved in the manufacturing process, and how many staff hours are required to complete a full production run? Answering these questions will demonstrate a detailed understanding of RTE department operations.

For example, making ham may require investing in brining equipment (pump, needles, tables, a vacuum tumbler), a smokehouse with trucks and racks, and a walk-in cooler to cool the RTE product once it is cooked. Be sure to have enough physical space allocated in the cooler for RTE product and for raw, brined product, space for the tumbler, and space for finished product in the cooler or freezer. New packaging equipment and supplies are also

needed, but much of it can be used for multiple products. Ham, bacon, smoked sausage, and jerky can use much of the same equipment and space. Hot dogs, bologna, and other emulsified products need special equipment — for example, a bowl chopper — to achieve the right consistency. To cook bone-in products requires a dedicated, RTE-only bandsaw; sliced meats need a deli slicer. These examples show the importance of thinking through the variety of products to create a comprehensive equipment, design, and operational plan.

- c. How much revenue will be generated by RTE processing services? What price per pound will processing clients pay for these services? Based on a realistic estimate of annual quantities discussed in the previous section, how much gross annual revenue will be realized from each RTE product?

Many processors price their RTE processing services based on the “green weight” of the raw material instead of the finished product weight. It is also less time consuming to charge on green weight, because it is recorded during product preparation so there is no need to weigh finished product for invoicing.

Create a simple table showing total estimated revenues, as follows:

Product	Processing fee per lb (green weight)	Estimated lbs per first full year of operations	Estimated first year gross revenues
Barbecue	\$3.00	10,000	\$30,000
Beef sticks	\$2.50	6,000	\$15,000
Smoked sausage	\$2.50	20,000	\$50,000
Sliced ham	\$3.50	2,500	\$8,750
Totals		30,500	\$103,750

It is also helpful to estimate production increases for each product in the first few years of RTE operations. Many new departments start at low volumes in the first year, as best practices are established, employees learn efficiencies, and clients develop markets and get comfortable with production quality.

7. Development Plan

This section discusses the process and costs of opening the RTE department and needs to address the following:

- a. RTE location and floor plan. Describe the expansion plan. Will it be a new structure or a renovation of an existing structure? What will the floor plan look like and how many square feet will be added to the plant? Include a CAD-generated floor plan in the supporting documents section and reference it here. Clearly designate areas that require refrigeration or freezing units and describe the load requirements for compressors. With help from a general contractor or other expert, estimate fixed asset building costs and a price per square foot of building or renovation. Assure that the cooker can be accessed from the raw processing space where brined, or marinated meats are held before cooking. RTE product cannot be returned to a raw processing space and must go into a separate cooler and processing space after it is cooked. However, once it is packaged, RTE product may be stored in the same cooler or freezer as packaged raw product.

- b. RTE department equipment. Itemize and price out all equipment needed for the RTE department. Note what is already owned and what must be newly acquired. The list of equipment may include brining equipment, stuffers, choppers and grinders, smokehouses, and thermoformers or other packaging equipment. Clearly designate equipment that must be purchased and include a line-item list of anticipated costs of acquisition and installation. Quotations for key pieces of equipment may be included in the supporting documents. Below is a list of necessary equipment and correlated products. This does not include coolers, which are included in base construction costs.

Item name	Description	Cost
Ham and BBQ	Brine pump and injector needles	\$3,000
	Brining station: table, brine barrel, extra lugs and carts	\$750
	Vacuum tumbler: size will correlate with cooker capacity	\$12,000
	Smokehouse or other style oven	\$35,000
	Trucks and racks to hang or hold product in the cooker	\$2,000
	Bandsaw: needed for bone-in (i.e., ham) products	\$5,000
	Slicer	\$6,000
	Packaging and labeling equipment (can be simple as paper wrapping, or higher end, e.g., vacuum pack, shrink wrap, thermoform for high volumes, or other)	\$15,000
	Meat Chopper ("pulled" BBQ): A tabletop unit that shreds warm or cooled meat to make "pulled" meats	\$1,500
Smoked sausages, snack sticks	Grinder: this can be the same grinding and mixing equipment used for fresh sausage	\$18,000
	Stuffer: A piston stuffer or vacuum stuffer (for higher volumes) is used to stuff sausages before cooking	\$50,000
	Linker (optional): some processors use a linker to cut sausage links before smoking. This can be a tabletop model or one that attaches to a vacuum stuffer (more expensive, but potentially worth it for high-volume production)	\$5,000
Emulsified sausages – all the same equipment as Smoked sausages, plus:	Bowl Chopper: achieves the proper emulsification, bonding, and texture of a product such as hotdogs, bologna, or kielbasa	\$25,000

- c. What other costs of development are expected? For example, if a staff person will be responsible for overseeing the development, how much will they be paid for this in addition to regular duties? Is hiring an architect necessary? Architectural fees may be 10% of base construction costs. What permits are required? Adjustment to insurance coverage? Grease traps? Tap fees for new water and sewer connections can be expensive. List each activity and event, with cost estimates.

The development plan needs to include an accurate estimate of total costs of development, as well as a timeline for getting to opening day. Here is a simple example of a development budget:

RTE Expansion Development Budget		
Construction	1,000 sq ft expansion @ \$180/sq ft	\$180,000
Equipment	Comprehensive list	\$180,000
Architect	9% of construction	\$16,200
Permits	Fire, sewer, water, building	\$7,000
Personnel	Half time FTE, 1 year	\$15,000
Construction loan interest	\$150,000 loan at 8% for one year	\$12,000
Total Cost		\$410,200

This budget assumes that the RTE department will be built on company-owned land attached to the slaughter and raw processing facilities. FSIS is extremely concerned about contamination between raw and cooked processing areas and prefers absolute physical segregation between the two. However, operationally, the RTE department should be attached to the main plant to limit any exposure of the product to pests or outdoor elements. The construction cost of \$180 per square foot includes all refrigeration.

The sample development budget includes \$180,000 for RTE processing and cooking equipment. True costs for equipment will vary widely depending on the type of RTE processing and whether equipment is sourced new or used.

RTE profit and loss projections should include a discussion of financing needs, with anticipated amortization and depreciation of equipment factored into building and equipment. If, for example, a construction loan is needed for \$180,000 in construction costs, interest paid during construction must also be factored into development costs. In the sample budget, \$12,000 of the development budget is for servicing interest on this loan; it is assumed that the loan will be converted to a long-term mortgage after construction is complete.

8. Personnel Plan

Who will manage and work in the RTE department? Accurately describing the management personnel and number of staff needed for an RTE operation is crucial, as labor will probably be the single most expensive operational cost. Many plants will have personnel that process both raw and RTE products. Yet it is very useful to treat each department separately and allocate employee hours accordingly. Accurate cost accounting will be essential to assessing the profitability of the RTE department and whether it benefits or detracts from the overall business. There are a number of ways to increase efficiency in processing, but all require an understanding of labor and other costs.

The normal ramp-up phase of RTE operations may not require that new line staff be immediately added. An RTE department will probably only operate at a fraction of its capacity during the first year or two. Some staff may work in RTE for half of their hours, while an RTE department manager will probably start at fulltime in order to focus on product development, HACCP modifications, and other activities that will maximize efficiencies once operations are approaching capacity.

Forecasting labor needs is directly related to the volume and type of RTE products being made. A single production shift may require a two-person crew to prepare raw materials for cooking, operating a smoker, cutting and chopping finished meats, and packaging finished products into retail or wholesale packages. Crew size may expand according to volume, or the total hours expected of the crew may increase to the point where the RTE crew is dedicated to that department.

In addition to gross wages, typically at an hourly rate, labor costs include Social Security and Medicare expenses (FICA), worker's compensation insurance, and unemployment insurance. True labor costs may be 30% or more above base hourly wages, especially if health insurance is included in benefits.

A typical full time job has between 1,850 and 2,000 hours of labor per year. A sample labor cost for RTE operations is shown below:

Personnel	Pay Rate	Total Annual pay
RTE Manager	\$30,000/yr	\$30,000
Line staff (3 staff halftime)	\$12/hr	\$36,000
Total gross wages		\$66,000
Workers Comp	6% of wages	\$3,960
SS/Med	8% over wages	\$5,280
Total Wage Costs		\$75,240

Because this template assumes the RTE department is an expansion of an existing business, no additional administrative staff is needed. Back office support for scheduling, billing, payroll, and laundry are add-on responsibilities for existing staff or service providers. Some additional expense is expected from back office staff but is not directly allocated to the RTE department's budget.

9. Year One Revenue and Expense Analysis

The revenue and expense analysis for the first year of operations focuses solely on the new RTE department, as each department in a meat processing facility should be able to generate profits.

Most new businesses, even successful ones, lose money in their first year or two of operations. The first year profit and loss statement will probably show a loss at the end of the first year, especially if financing is needed for development. If the business plan is accurate and sound, anticipated annual increases in business should achieve profitability in subsequent years. It is extremely important that the anticipated level of business activity be based on sound research and not fabricated to show profitability on a spreadsheet. Many businesses over-estimate revenues based on wishful thinking, leading to failure.

The Year One Revenue and Expense Analysis should include every type of expense that the new RTE department will incur. Some expenses will be **fixed costs**, such as utilities, cleaning supplies, and the RTE manager's salary. These are expenses that you will incur regardless of whether processing is taking place. Other expenses, such as packaging supplies, will be **variable costs**, which will increase or decrease according to volume of production. If line staff are employed specifically to work in the RTE department, or if a portion of their labor is permanently allocated to RTE work, line staff and associated expenses may also be considered fixed costs.

Costs of goods sold (COGS) are expenses incurred to acquire raw meat for fabrication and cooking. It also includes spices, casings, and other raw materials that are part of a finished RTE product. Because this sample RTE department is an expansion of an existing fee-for-service slaughter facility, all meat comes from the rest of the business at no additional cost to the processor. Pricing for cuts or ground meat is factored into the base cost of processing services and does not accrue to the RTE department. If, however, the operation will buy cuts or ground meat for RTE processing, a line item must be included for the costs of acquiring this material. It is a good idea to include COGS as a line-item even if the current cost is zero.

With Quickbooks or other business accounting software, expense line items can be identified through the chart of accounts. It is a good idea to create an independent chart of accounts for the RTE department before beginning operations.

RTE Department, Year One		
Item	Description	Amount
Revenues		
Barbecue	10,000 lbs green wt	\$30,000
Beef sticks	6,000 lbs green wt	\$15,000
Smoked Sausage	20,000 lbs	\$50,000
Sliced ham	2,500 lbs	\$8,750
Total	30,500 lbs	\$103,750
Expense		
Management	1 manager	\$30,000
Labor	3 staff halftime	\$36,000
Total Labor	Base wages	\$66,000
Employer's FICA	8% of wages	\$5,280
Worker's Comp	6% of wages	\$3,960
Cost of Goods Sold	Spices (\$0.19/lb of sausage; \$0.15/lb of beef sticks)	\$4,700
Packaging	\$0.07/lb of finished wt	\$2,000
Utilities	Electric, water, etc	\$8,400
Personnel Supplies	Gloves, boots, smocks, hairnets	\$1,500
Sanitary supplies	Chemicals, towels	\$3,500
Microbial Testing	Listeria, E. coli, Salmonella	\$3,500
Repairs and Maintenance	Misc. equipment repair	\$3,000
Total Operating Expense		\$101,840
Profit/Loss*		\$1,910

* Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA)

Business plans should anticipate certain expenses that will be incurred before an RTE department is earning more than it costs to operate. Financial planning for the expansion must identify sources of funds to support operations at start-up, whether from company savings, outside investors, or a traditional lender.

This plan assumes a total development cost of \$410,200, of which \$180,000 is for construction. This assumes that the company has sufficient investment capital for equipment and all other non-construction investments. The company secures a construction loan for the base construction, converting to a long-term mortgage of 5% amortized over fifteen years.

Taxes and depreciation are also factored into an overall profit and loss projection. Investments in capital equipment with a value in excess of \$5,000 can be depreciated from the company's bottom-line over a seven-year period. Equipment acquired at any time can be depreciated, along with any construction costs not borrowed from lenders. This can get very complicated, but this example keeps it simple by assuming the following interest, amortization, and depreciation activities:

Interest, Principal and Depreciation, Year One		
Mortgage Principal	Principal and Interest = \$2,562/month	\$14,884
Mortgage Interest		\$15,862
Depreciation	\$180,000 over 7 years, straight line	\$25,714

Now that financing activities have been factored, the full Year One Profit and Loss statement appears as follows:

Year One Profit and Loss	
Revenues	\$103,750
Operating Expenses	\$97,275
EBITDA* P&L	\$1,910
Loan Principal Expense	\$14,884
Loan Interest Expense	\$15,862
P&L before Depreciation	(\$28,836)
Depreciation Expense	\$25,714
Final P&L	(\$54,550)

* Earnings Before interest, taxes, depreciation, and amortization.

The first year profit and loss analysis highlights the importance of financing to operational profitability. While Year One generated a profit on actual business activities for the year, the combined debt service and depreciation of purchased equipment resulted in a net loss of \$54,550. In order for an RTE to be truly profitable, it must generate sufficient profits to cover financing and also provide a reasonable return to the company.

10. Growth and Sustainability

This template assumes the RTE department will grow and achieve profitability over a three-year period. The sample three year pro-forma profit and loss projection is as follows:

RTE Department, Three Year Profit and Loss Projection			
Item	Year One	Year Two	Year Three
Revenues			
Barbecue	\$30,000	\$45,000	\$72,000
Beef sticks	\$15,000	\$40,000	\$48,000
Smoked Sausages	\$50,000	\$65,000	\$95,000
Sliced ham	\$8,750	\$17,500	\$21,000
Totals	\$103,750	\$167,500	\$236,000
Expense			
Management	\$30,000	\$30,000	\$30,000
Labor	\$36,000	\$50,000	\$65,000
Total Labor	\$66,000	\$80,000	\$95,000
Employer's FICA	\$5,280	\$8,160	\$9,920
Worker's Comp	\$3,960	\$6,120	\$7,440
Cost of Goods Sold	\$4,700	\$18,350	\$25,250
Packaging	\$2,135	\$4,400	\$5,280
Utilities	\$8,400	\$8,400	\$8,400
Personnel Supplies	\$1,500	\$1,500	\$2,000
Sanitary supplies	\$3,500	\$3,500	\$4,000
Microbial Testing	\$3,500	\$3,500	\$3,500
Repairs and Maintenance	\$3,000	\$3,000	\$5,000
Total Operating Expense	\$101,840	\$136,930	\$165,790
EBITDA*	\$6,475	\$48,920	\$95,460
Mortgage Principal and Interest	\$30,746	\$30,746	\$30,746
Depreciation Expense	\$25,714	\$25,714	\$25,714
Profit and Loss	(\$54,550)	(\$25,890)	\$13,750

* Earnings Before interest, taxes, depreciation, and amortization.

The three-year pro-forma serves as the guiding financial plan for the RTE department. Despite best efforts to anticipate all costs and revenues associated with RTE production, the pro-forma projection is at best a highly educated estimate of all financial activity. Certain costs will be found to have been over- or under- estimated, and revenues from particular RTE items will not likely match expectations perfectly. Be prepared to amend and update financial projections on an on-going basis.

11. Supporting Documents

Supporting documents provide proof that the projections in the plan are sound. A lender will require these documents before accepting that the plan assumptions are accurate and that the company is prepared to enter RTE production. Supporting documents that may be needed include:

- a. Previous years' profits and loss statements: Financial viability of the existing meat processing operation is perhaps the single most important consideration of whether the company is ready to enter RTE production. Supply profit and loss statements for up to three years of business activity. This may be in the form of profit and loss reports generated by Quickbooks or other accounting software;
- b. Expansion floor plan: A CAD-generated line drawing will show exactly how the RTE facilities will be built. The drawing should clearly show how product would flow through the department and includes coolers, processing rooms, and any needed employee welfare facilities such as a bathroom and break area. Existing welfare areas may be sufficient but must be situated so as to prevent any cross-contamination between raw product and RTE areas;
- c. Construction cost estimates: A general contractor or architect may be willing to supply a formal estimate of all construction costs. Having an accurate quote for construction also demonstrates an established relationship with a builder;
- d. Real estate plat: A site plan or aerial view of the land shows that there is sufficient space to expand in the present location. The plat may also indicate the exact footprint of the expansion and proximity to existing utility connection points;
- e. Equipment price quotations: Any equipment priced in excess of a few thousand dollars should be documented with spec sheets and pricing. If used equipment is to be acquired, quotes from vendors or other proof that used prices are accurate are essential;
- f. Statements from clients: the RTE expansion responds to identified existing demand. As a fee-for-service business, the company needs its key clients who are committed to using the new RTE services to provide letters of commitment stating demand for specific RTE products, as well as volumes needed and anticipated fees on a per pound basis. The best scenario is to have contracts with clients in-hand to prove solid commitment for the services.

12. Conclusion

Every new expansion plan will be highly specific to the aspirations of the individual processor. This document serves as a general guide to all necessary components of a well-developed business plan. Prices for equipment, construction, labor, and all other associated expenses will vary according to circumstances, as will cost of financing according to the company's financial strength and current interest rates. Fees for specific types of RTE production will fluctuate according to market demand and necessary investments of time and personnel.

Finally, the business plan should **not** be written once, used to leverage financing, and then forgotten. To realize maximum benefit from the business plan, expect to update and adjust projections constantly as they are realized or as conditions change. The business plan should be a living document to use as a road map to profits for as long as the company is in business.

7 Peer Learning Exchanges

Creating space for processors to talk through challenges and share ideas and fixes – and, let’s be honest, to trade war stories – can be extremely useful for them, both for short-term problem solving and long-term resilience and morale. It can be hard to pull processors away from their own businesses, to step “off the block” (or out from behind a computer screen). But when they make time to talk to their peers, in groups or one on one, they can really benefit.

Over the course of this project, NC Choices brought processors together in two ways: processor roundtables and facilitated tours.



Processors Arion Thiboumery, Joe Cloud, Richard Huetteman, Wassim Chaudry, and Misty Dyson at the NC Choices Processor Roundtable. Photo credit: Clicks Photography, Carolina Meat Conference

Processor Roundtables

NC Choices hosts a processor roundtable at the annual Carolina Meat Conference. In 2013, six processors engaged in discussion for 90 minutes with an audience of 45 attendees. Processor participants included both experienced and relatively new operators from very small to mid-sized plants. Recurring themes were how to hire, train, and keep good people; how to deal with an aging plant; and how to address bottlenecks that limit throughput.

*A lot of it is trying to adapt your facility to what your customers want now, trying to stay ahead of the rust monster and the regulatory monster and strategies for doing that ... cost-benefit analysis for new facilities versus fixing old facilities ... trying to identify and solve bottlenecks in processing. — **Amanda Carter, Foothills Pilot Plant***

*It always helps to sit down with other processors and say this is our bottleneck. What do you do? You get to hear what other folks do and consider if it would work here. — **Misty Dyson, Mays Meats***

Participants reported that the discussion was valuable, both for the information and the camaraderie. As Joe Cloud, of T&E Meats in Virginia, explained, “We’re all in the same business, but everyone’s completely unique. We have similar problems but solve them differently. It’s heartening to see people deal with similar problems and solve them. There are multiple solutions.” As an example, Cloud described the bonus program he uses to incentivize his staff, and other processors were quite interested.

Processors came away with real ideas for their businesses. For example, Amanda Carter of Foothills Pilot Plant learned that another processor was interested in shifting away from pork processing and saw that as an opportunity for her own business.

The roundtable is not limited to processors: the audience also includes livestock producers and buyers who learn more about how processors operate, their challenges, and their innovations. This valuable “cross training” improves producer-processor working relationships.

Misty Dyson of Mays Meats explains, “I love the Carolina Meat Conference because it gives our customers a clearer understanding of the challenges many processors face, so it’s good perspective. When a client hears that another processor located 100 miles away has the same issue, they see it’s not just us. That creates an educational environment.”

It also exposes producers to processors they may not have known before. As one farmer said, “we discovered we are lucky to have a processor close by and available to use year round.”

Tips for an Effective Roundtable

NC Choices Co-director Casey McKissick has facilitated processor roundtables for three years and has this advice to make them most effective:

- Plan the session to be an hour or at most 90 minutes;
- Talk to participants beforehand and identify a list of hot topics to start with or return to if redirection is needed;
- Plan to cover about four or five general topics;
- Make sure not to stay on one topic too long;
- Try to choose common issues for participants;
- First-hand accounts are what participants and the audience want to hear: how people tackle challenges in their specific plants.

Facilitated Tours

NC Choices organizes and facilitates peer to peer exchanges for meat processors at each other’s plants. While roundtables bring processors together over common topics, tours allow a deeper learning experience by letting processors see each other’s facilities in action and dig into specific operational details. On one tour, NC Choices planned and facilitated a visit for Jim Mays of Mays Meats, a small plant, to Minnesota to visit a mid-sized processor, Lorentz Meats.

The tour had an aspirational and big picture feel: while Mays had questions about specific parts of Lorentz's operation, he also wanted a vision of how he might grow his plant and develop his business over time. Initially, NC Choices had suggested visiting another successful plant that was more similar to Mays in terms of size and scope. Jim Mays was more interested in visiting Lorentz Meats, however, because of its reputation as an innovator and leader in small- to mid-sized processing for local and regional niche meats.

After the visit, Mays said it was inspiring to see a small plant grow to that scale, especially because they were clearly doing it profitably. He also left Lorentz with some very real lessons about dry aging options, byproduct economics, packaging, and Ready To Eat (RTE) products.

For example, Mays learned about innovative options for dry-aging beef. Long aging times requested by Mays customers were keeping his cooler too full for too long, significantly slowing down how much product he could move through his plant. Lorentz Meats solves this problem by aging beef carcasses a maximum of 3 days before cutting and shipping. This practice results in greater throughput with the same amount of cooler space. Some processors choose to only dry-age high-value middle meats instead of whole carcasses, and only for specific customers willing to pay for this extra service, again saving expensive cooler space and allowing for increased throughput. Mays considered this approach, but felt it wasn't quite right for his customers, who typically find longer aging to be a marked benefit in their marketing. In addition, separate aging of middle meats may be too difficult and ultimately costly to manage for small plants with many small-batch customers.

Ultimately, based on his visit to Lorentz and the operating environment in his own plant, Mays is considering charging customers an extra fee for more than 10 days of dry aging. That helps encourage customers to have their beef cut earlier and therefore move more carcasses through the plant's coolers more quickly, increasing throughput.

Key points about facilitated tours:

- The value of facilitated plant tours cannot be overstated. "If we had this project to do over again," McKissick says, "we would do a lot more of those visits."
- Processors really enjoy visiting other plants. It just may take some serious nudging to help them find the time. A hook – like the need to solve a problem for a key customer – can be an important motivator.
- The processor roundtables at Carolina Meat Conference and similar events allow interaction with several peers at once and are a great place to start peer networking.
- Facilitated tours will often require funding: the tours done in the course of this project would not have happened without NC Choices covering the travel expenses.

8

Guidance for Starting a Local Butcher Shop

This chapter provides general guidance related to starting a butcher shop focused on local, sustainable meats. The guidance is drawn from NC Choices' work with two butcher shops started by farmers to do specialized processing and bolster their retail sales. The guidance here is useful to anyone thinking of starting a small butcher shop, as well as technical service providers assisting such an entrepreneur.

As a subset of this trend, the local, full service butcher shop business model has piqued the interest of the niche food shopper. Today's specialty butcher shops differ widely in look and feel, from ultra-modern urban to mid-century hip to rural farmers market. The style changes with the clientele and market, but these stores have the common goal of providing goods and services that cannot be had in a grocery store, even one focused on natural foods, including transparency in sourcing, personalized service, and a "neighborhood feel."

Farmers interested in starting a butcher shop to feature their own meats will have much better chances of success if they have most or all of the following assets or skills already:

- 1) An established brand in a stable market;
- 2) The ability to produce most if not all the animals;
- 3) Access to capital needed to build and cash flow while maintaining production operations
- 4) Hired staff on farm and/or in the shop;
- 5) Culinary and/or restaurant experience or the funds to hire consultants to develop menus and products focused on whole animal utilization;
- 6) Meat cutting, sausage making, and meat merchandising skills or experience;
- 7) Established markets for value added products created by other processors and the ability to realize cost savings by owning the processing step;
- 8) Access to reasonably low overhead space in high traffic urban and suburban areas.

A retail-exempt processor can also sell a limited amount of product on a wholesale basis to hotel, restaurant, or institutional customers, as long as the product has NOT been cooked, cured, smoked, rendered, refined, or otherwise processed in a manner not listed in [9 CFR 303.1\(d\)\(2\)\(i\)\(a\),\(b\),\(d\), or \(e\)](#).



Photo credit: Stephen Bailey, Heifer International

What is Retail Exempt?

The Federal Meat Inspection Act requires that all meat sold must be processed under inspection (federal or state, in states with “equal to” inspection programs). There are two exemptions to this requirement: the custom exemption and the retail exemption. Retail exemption allows a meat processor to sell meat at its own retail storefront without daily inspection. The processor is still subject to periodic, risk-based inspection by USDA FSIS and/or state authorities, and the meat used to produce retail products (fresh cuts or processed meats) must come from livestock inspected and slaughtered under federal or state inspection.

Retail-exempt wholesaling is limited to 25% of the dollar value of the processor’s total sales or \$69,600 for red meat and meat products and \$54,500 for poultry products per calendar year, whichever is less (Federal Register April 23, 2013). The dollar value limit is reevaluated annually by USDA’s Food Safety and Inspection Service (FSIS) and published mid-year; these values given here apply to calendar year 2013. (To receive an email alert from FSIS when the new dollar values and other FSIS documents are published, sign up at: www.fsis.usda.gov/News_&Events/Email_Subscription/index.asp.)

Delis and Take-Home Items

Retail butcher shops may benefit from integrating a deli or lunch counter or offering ready-to-eat (RTE) foods packaged to go. Retail butcher shops are inspected in a similar fashion to restaurants in most states. Retail butcher shops often need commercial kitchens to prepare value added products that are critical to profit margins in the fresh meat department. Deli meats, bacon, smoked sausages, and similar products are critical to profitable whole animal utilization.

Food service industry publications report growing interest in RTE meals, and most grocery stores offer hot and chilled convenience items that require added labor, packaging, and loss but offer high profit margins to the retailer. A deli or lunch counter may provide an additional, complementary revenue stream for a small butcher shop. If the shop is already using a smokehouse to sell cooked and chilled sausages, why not offer that sausage, hot in a bun, to a hungry lunch crowd? Could the shop’s house-made deli meats be piled on a baked roll with all the toppings, wrapped and ready to go at lunchtime?

Walk-in Traffic

Commercial retail and food service businesses are highly dependent on walk-in foot traffic, adequate parking, and visibility from nearby thoroughfares. While more rural areas or small town shopping centers may offer attractive rental rates, walk-in traffic should be carefully monitored. Proximity to grocery stores and other specialty shops is beneficial and provides convenience for customers shopping for other food needs. Locations in out of the way or low



Photo credit: Stephen Bailey, Heifer International

traffic areas may be feasible but less likely to cash flow in the short term. Rent or purchase prices increase substantially in urban areas and in areas where successful, complementary businesses are located. Despite premium prices, profit margins may still be slim on a majority of items sold, so fixed overhead costs must be carefully considered.

Commercial Kitchens: Equipment and Revenue Generation

Retail butcher shops often have an adjoining kitchen used to add value to fresh meats off the block. Kitchens can vary widely from a single table with a hot plate and a hand sink to elaborate meat processing equipment like vacuum tumblers, stuffers, meat injectors, and automated smokehouses. The extent of the kitchen should be determined by market demand, space, and available capital and labor.

Mobile Food Units

In most states, retail exempt butcher shop operations may take advantage of Mobile Food Units (MFU) in order to increase sales. A MFU may take the form of a fully contained, motorized “food truck” with a full kitchen to offer hot foods, cooked to order. Some MFUs contain only a warming unit, cooling unit, and a hand sink to offer pre-wrapped, hot and cold foods; no food is actually prepared on the truck. Some MFUs are simply “pushcarts,” similar to a hot dog cart, hand-pushed to a street corner, fair, or park. MFUs are licensed to sell food in remote locations because they use an inspected kitchen as a commissary; they are subject to inspection as a food-service establishment. Retail butcher shops may use MFUs to bring the retail butcher shop experience to the consumer in a public place such as a festival, farmers’ market, or special event. Some MFUs offer hot, pre-wrapped, ready-to-eat items such as house-made hot dogs, bratwurst, and sausage biscuits or cooked to order sandwiches while offering cold, raw meats cut to order or pre-wrapped, as at the retail shop. MFUs can benefit the business by increasing sales volume and offering unique and niche meat products in a ready-to-eat form. They can also increase brand recognition by locating in high traffic areas, which then brings business back to the brick and mortar store front. MFUs may be very useful for retail butcher shops located in small towns where walk-in foot traffic is limited. MFUs require more labor, risk in transportation, and logistics that may require a dedicated staff person.

Mail Order

Retail butcher shops in rural and lighter traffic areas may wish to offer mail order to generate more revenue. With modern shipping containers and overnight service to most of the country, shipping shelf stable products such as bacon, cured salami, or jerky, and even raw meat products, can be profitable. Launching a successful mail order business requires significant online expertise, including a thorough understanding of taking credit cards for payment, dealing with shippers, internet marketing, and social media. Retail exempt product may be shipped in interstate commerce via common shippers (e.g., USPS, UPS, FedEx) and to household consumers, as long as the meat products were slaughtered and processed under federal inspection. Meat slaughtered and processed under state inspection may be processed and sold in retail exempt facilities but may not be used in retail exempt products that are shipped in interstate commerce.

Challenges to Profitability

Utilities, including gas, electric, and water to run multiple, large refrigeration units and commercial cooking equipment, may run between \$400 to \$1,200 per month for a small retail shop. It is a challenge to find skilled labor, especially trained meat cutters who can reliably test yields and profitability.

Profit margins can be very thin when the business model is to buy only local and niche meats and/or attempt to utilize whole animals. Pound for pound, head for head, local and niche meats cost more, in part because these producers and processors operate with relatively low volumes. Small farmers must pass on these high per unit costs to their buyers, including retail butcher shops, which in turn must be very careful when estimating profit margins on fresh and value-added products.

Retail butcher shops committed to handling local and niche meats must also seriously consider labor costs for breaking whole animals versus purchasing primals and subprimals. Cost savings from buying a whole beef may not cover the loss of bone and fat, the purchase and maintenance costs of a bandsaw, and the higher insurance premiums for its use. Businesses live and die on profit margin, and even reducing a 30% margin by 1% can make a difference to financial viability.



Photo credit: Stephen Bailey, Heifer International

9 Guidance on Packaging Equipment

Over the course of this project, several participants were interested in upgrading their packaging equipment, specifically to a thermoform solution. Thermoform systems create a professional, easily stackable, “retail ready” product that extends shelf life and holds a label very well (see figure below). These machines are very expensive to purchase, ranging from \$70,000 to \$200,000, and the operating supplies are a significant ongoing cost.

When can a small plant afford to make the considerable investment to switch from, for example, a double-chamber vacuum machine to a high capacity thermoform machine? How much volume justifies that investment?



To help participating processors decide if the investment made sense for them or not, NC Choices posed three questions to other processors, via the Niche Meat Processor Assistance Network listserv. First, are thermoform packagers appropriate for plants that typically process small batches for multiple farmers (for example, ~100 to 200 lbs per order for each of five different farmers on a given day)? Second, is there a minimum batch size? Third, is it easy to segregate product from different farmers?

Here are the four most useful answers:

#1: Yes we use a thermoform packager for small batches and multiple farmers. The question of easy segregation is going to depend on the competency of the crew running it.

We use our thermoform packager every day and every product that we run on it would be considered a small batch. The trick is good communication and some sort of break between batches. We typically leave a whole empty cycle in between the different batches and the tags for each batch are passed down to the end and lined up as the product exits the machine. The multiple options for regulating the machine speed also help to facilitate the smaller batches but for some products it also helps to stage it before it gets to the machine.



Small meat and poultry processors around the U.S. use the NMPAN listserv to share information and ask and answer technical, operational, regulatory, and other practical questions about processing. Join from www.nichemeatprocessing.org.

I suspect that most small processors that are running small batches aren't going to have enough space for most thermoform packagers. The RA-200 from Rollstock, Inc., one of the smaller ones on the market, is likely sufficient for the average processor's needs.

#2: There is no problem doing what you want to do with small batches. All you have to do is take a black marker and make a mark on the edge of last package and then start with the next order. We have had a roll stock for a couple of years now and wouldn't operate without it. You won't believe the time it saves. We don't even start to package until we have 6 to 8 hogs cut because the machine is so fast. It does take some getting used to as you have to adjust your cutting a little and watch for sharp bones but you have to do that with vacuum pouches too.

#3: With us it depends on the whole day's production. If we only have 200 lbs. of bulk product (5 to 6 lb. packages) we won't bother: our machine is so large, we would waste more film than what is required for packaging. We do a fair amount of slicing bacon for farmers, and we just leave an empty package to separate each farmer's batch of product.

#4: We ask ourselves this same question regularly. The answers so far have looked at the question from an operational perspective. The plant also needs to look at it from a financial perspective. Here is a quick scenario for financing the costs of a new packaging machine:



Assume the dealer will finance the machine and it costs \$80,000, no money down, 4 year term, 5% interest: your monthly payment is \$1,842. Anyone can download a free amortization schedule and easily play with this, changing price, term, and interest rate.

Your standard processing fee is unlikely to cover that monthly payment. But say you charge \$0.50/lb to process that sausage. At 200 lbs per week per customer, with 5 customers, that is $5 * 200 * \$0.50 = \$500/\text{week}$, or \$2,000 per month. Some of that \$2,000 will go toward thermoform plastic (more expensive than vacuum bags), but the extra revenue is enough to make the monthly payment for the machine.

Is the extra speed and packaging quality worth the extra monthly costs? Only if you have enough volume to support it. The packaging quality will definitely attract customers to you, if there is enough demand for high quality processing services in your area. That's a big "if" in many parts of the country.

Acre Station Meat Farm Experience

After four months of using the Rollstock, Richard has no complaints. "It has saved me a lot of time and labor. I can now process bacon within one and a half days when it used to take me all week. It has also helped us get things done and prepped in production.

His one limitation initially was physical space: before expanding his plant in the fall of 2014, Richard did not have enough room to use the Rollstock fully. "To take full advantage of all the product varieties it can package," he explained, "you really need the space to feed product in at all times, with very little stop time, and keep it in heavy use."

10 Tips for Technical Assistance Providers

Processors and their livestock producer customers were not the only audiences that benefitted from this technical assistance project. NC Choices staff took away valuable lessons about how to do this work effectively, provided here as tips for others working with processors:

1. **Plans and Priorities**

Processors have so much to do day in and day out that even when they are excited about making changes, making specific plans and implementing them may not be prioritized. Be patient and try to understand shifting priorities.

2. **What Inspires**

Processors who may appear to have lost interest in a project are often recharged by talking to or visiting other processors, the prospect of a big new customer or expansion by a current customer, and receiving awards or grants to move a project forward.

3. **Timing Matters**

It is next to impossible to get anything new done in the fall and winter holiday season, which is peak processing time.

4. **New Facilities May Not Be the Answer**

Sometimes, despite apparent demand, there is not actually a need for a new facility. Providing enough grounded information to stop a misguided project is actually a positive outcome, because it prevents financial losses by participants and allows them to redirect resources to more successful ventures.

5. **Relationships Matter**

Progress may come slowly, but time invested in relationships with processors as an active listener and thinking partner will pay off.

6. **Jobs as the Goal**

Increasing profitability for a small processor may not translate into more jobs at that plant, at least in the short term. When technical assistance is funded with the expectation for economic development, immediate job creation may not be the best metric. More appropriate are long-term rural development expectations, for both processors and their livestock producer customers, beyond the plant employee roster.

7. **Cross-training**

As noted earlier in this manual, peer exchanges for processors can be very useful. NC Choices will focus much of its technical assistance resources in the future on these peer to peer exchanges as a cost effective way to support processors.



8. **You Need Customers and Markets**

One participating processor who wanted to get into value-added processing had found a nearby empty facility but had not yet found customers for the new service and had not considered the time needed to develop those relationships. Without a committed customer the project stalled.

9. **Expect Surprises**

Some projects may seem permanently stalled but then suddenly revive. Be flexible and ready for emerging opportunities.

10. **Communicating Improvements**

When processors increase efficiency or make other improvements, they may need help communicating the benefits of this to their customers: “what benefits my business also benefits yours.” Not many processors proactively tell their customers about improvements made other than informally.

11. **Efficiency May Not Be a Priority**

Not all processors want to increase efficiency. Some may want to generate enough work to keep their employees busy. Others may want to focus on increasing throughput. When technical assistance providers have different priorities, making changes will be difficult.

How to Prepare for a Consultant’s Visit

In addition, the following suggestions will help processors make the most of opportunities to work with outside consultants.

- Prior to a consultant’s visit, get prepared so you can make the best use of the consultant’s time on the ground. Share documents ahead of time with the consultant, as requested.
- Have a list of concerns that you want the consultant to focus on and have all of your questions ready and organized so that you are not spending time during the visit trying to think of the right questions to ask.
- If the concerns are something that is best seen in person, make sure that you have that operation up and running, with plenty of product to run through it, so you can operate it while the consultant is observing how it works and your related procedures.
- If the consultant is going to be analyzing data, try to provide as much as possible in advance so that he or she can start building an idea as to how the operation runs.
- Background information is always helpful so that the consultant isn’t sitting around asking you for numbers that you could provide upfront. Remember, for the most part, the consultant isn’t worried about the actual numbers but is more focused on why the numbers are what they are and what trends have led to it.
- Finally, be open to the idea of looking at other aspects of your business than those you thought were the focus of the visit. The consultant’s “fresh eyes” may see connections you may not have seen before.



Conclusion

The diversity of tools and strategies included in this manual demonstrates the highly responsive and participatory nature of this technical assistance project. NC Choices designed and launched the project with a broad and important goal: to improve the quality and quantity of processing services available to the state's livestock producers, to enhance the economic viability of both producers and processors. Achieving this goal in practice meant working with specific processors on specific needs and goals they themselves identified as important to their businesses. Through an early stage assessment, NC Choices and the processors together selected strategies to meet those needs and goals. Those strategies – as well as the needs and goals – evolved over the course of the project as knowledge, conditions, and opportunities shifted.

Though developed for specific processors, the information, strategies, tools, and recommendations described in this manual will certainly be useful to other processors around the country, as well as individuals and organizations that provide similar support to processors in their regions. Small-scale processors may have different individual needs at different times, but they face many of the same challenges. Order and inventory management, customer service and feedback, records management, evaluating the wisdom/cost effectiveness of adding new services, improving efficiency, and other topics discussed here can be challenging for most small processors, especially those that are owner-operated with few additional staff.

The project was also based on the idea that working with existing processors, including highly trafficked processors who service many of the small scale livestock farmers in the state – rather than building new plants that may also struggle to be economically viable – is essential to expanding the local meat and poultry sector and market opportunities for farmers.

Project outcomes for participating processors are described in the project's final report, available by request from NC Choices. Although the project formally ended in June 2014, NC Choices will continue to work with the involved processors to gauge the long-term effect of changes they have made. This information will be made available on the NC Choices website (www.ncchoices.com) and through the national Niche Meat Processor Assistance Network (www.nichemeatprocessing.org).

A Final Word

In exit interviews, participating processors said how much they valued being part of the project. Richard Huettman, owner-operator of Acre Station Meat Farm, is already seeing the benefits:

“My customers are really excited about the changes taking place, and I believe what we've done during this project will bring us new customers in the future. ... By the end of summer, I expect to gain two more high volume customers and another two more in the fall. ... NC Choices has really helped support the growth of my business over the years.”

Additional resources

The Manual chapters include numerous references for more tools and information. Additional useful resources include:

Carolina Meat Institute: an NC Choices initiative that provides interactive trainings and conferences focused on local, niche and pasture-based meat supply chains with the goal of connecting key people and sharing ideas and resources.

Niche Meat Processor Assistance Network (NMPAN): a national network of processors, producers, universities, agencies, and NGOs building and supporting the processing infrastructure essential to local and regional niche meat markets. NMPAN's mission is long-term stability and profitability for both processors and the producers who depend on them to market sustainably raised meats. www.nichemeatprocessing.org.

USDA Food Safety Inspection Service:

- USDA-FSIS home page: www.fsis.usda.gov/wps/portal/fsis/home
- Small Plant Outreach: www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/haccp/small-and-very-small-plant-outreach
- Small Plant Help Desk: 1-877-FSIS-HELP or InfoSource@fsis.usda.gov

American Association of Meat Processors: AAMP is the only national trade association focused on small and very small processors; AAMP members have access to a large library of model HACCP plans and other regulatory compliance resources. www.aamp.com.

For processors and producers in North Carolina:

- North Carolina Department of Agriculture (NCDA) Meat and Poultry Inspection Division www.ncagr.gov/meatpoultry/info.htm
- North Carolina Cooperative Extension: www.ces.ncsu.edu
- Farm Credit Associations of North Carolina: www.farmcreditnetwork.com