INSTRUCTIONS FOR PRODUCT COST CALCULATORS

Introduction

These calculators allow you to simulate four common food processing scenarios:

(1) building a small kitchen on your own farm
(NCAT Commercial Kitchen On Your Farm.xlsx);
(2) short-term periodic leasing of a commercial kitchen
(NCAT Commercial Kitchen Hourly Rental);
(3) long-term continuous leasing of a commercial kitchen
(NCAT Commercial Kitchen Long-Term Lease); and
(4) building a new commercial kitchen
(NCAT Commercial Kitchen Build-Operate).

These scenarios correspond to a typical development process for a value-added operation. You might start small by selling to existing customers, then grow your business by selling to a larger, but still local customer base, mostly direct sales; then you might start selling your products through a distributor to a major retail grocery chain or specialty food store chain that has regional, statewide or even national customer bases.

You'll need basic familiarity with Microsoft Excel and the calculators require detailed input which you will have to compile about your product(s). You can only type in the cells that are shaded green or orange because the rest of the cells are locked. You should feel comfortable using these calculators with as many simulations/scenarios that you think are possible. You cannot break these calculators so don't hold back!

If you're using a full version of Microsoft Excel, you'll need to "enable editing" after opening the files. If you're using Excel Online you'll need to not only view the spreadsheet but click the "OPEN" button to be able to enter data.

NCAT Commercial Kitchen: Long-Term Lease

This worksheet includes nine tabs, six of which require you to enter data. Although you can fill the pages out in any order, you'll probably find it easiest to go through them in the order presented (left to right).

Introduction tab

Please read the Introduction tab before using this spreadsheet.

Production Assumptions tab

This tab presents some fixed costs of leasing a commercial kitchen and running the entire operation yourself.

In the green block on the left side, list the names of products you want to analyze. Sample product names are provided and you can change or delete them. There is room for up to 10 products, although you can do as few as one.

In the green box below that, Annual Production Capacity %, indicate the percentage of a full year's production capacity that will be taken up by each product. If the total exceeds 100%, you have exceeded the total capacity of the facility and you will get a warning. Fill in the remaining green boxes on the left with your estimated number of Hours of Production Per Day that you are leasing the kitchen, your lease terms for Days of Production Per Year, and the number of employees you plan to have for Production Staff.

The names of your products will auto-fill into the 10 boxes going out to the right called "*Ingredients & Other Variable Costs.*" Enter the ingredients and other costs for each product.

In the next two green boxes starting with, "Units", put in how many units of the product you can make per batch and how many batches per day you can make.

The next box, "Shrink/Waste/Giveaway", is your estimate of what percent of each product will *disappear*, in the sense that it will be made, but not sold for any revenue. This could be based on several types of usage for that product: marketing promotions, product spoilage, and product returns, etc. We suggest that you use the number of 3%, but you can change that number (for each value-added product) if you wish.

Then enter the "Total Packaging Costs per Unit of Product." If, for example, you are putting your product into a jar, the costs should include the jar, the label, the lid and that one unit's share of the cost of the container that might be used to ship one case of the product.

You will also need to make your best guess as to the average selling price of your product. **Varying this estimated price may be the principal reason for many of the simulations you will do.** There's also space at the bottom for recording your assumptions and other notes.

Personnel Expenses tab

The first box you see is labeled "Payroll Information". Here you will answer questions about employer payroll taxes, retirement benefits and health insurance benefits that you plan to pay the management staff of your operation. For the payroll taxes that you as employer must pay, we estimate that to be about 8.5%. This includes FICA (6.25%), Medicare (1.45%) and Unemployment (.5 to 1.5%) in 2017-2018.

For retirement benefits, this is an employee benefit that may be worth considering in your business cost structure to help you recruit and keep the employees you want. You can indeed input a value of 0% for the row entitled "% of Retirement Tax to Salaries".

The same discussion applies for the next row. Employers of small businesses sometimes do not have to offer any subsidized health insurance to their employees depending on their size. You will need to find out for your situation whether you need to include this. Again, you can input a value of 0% for this cost estimate if that's appropriate for you.

The final row in this box is an estimate of how much you think wages will increase per year just to keep your employees in place. We call this “Wage Inflation”. This figure is running about 2% to 3% on a national level. We suggest that you use a small number for this estimate, say 1% or 2%; since wages are probably such a big part of your projected expenses, we think this will give you a better view of the actual costs of your projected operation as you look 5 or 10 years down the road.

Continuing down the screen view of this tab, you will see a matrix that consists of five rows of green shaded fields and four columns of data entry fields. The purpose of this chart is to calculate the total yearly personnel costs for your operation based on all the decisions you have made previously about wages, taxes, benefits and some new decisions you will make for the first time with this chart. For example, you have previously decided the number of production personnel needed to make the batch schedules described in the boxes called “Ingredients & Other Variable Costs”. Given that staffing decision, you must now decide how many non-production line staff people are needed to do the remaining managerial, marketing and distribution work.

Starting in the first row, you will enter the title of the first non-production line job type. This could be plant manager or bookkeeper or warehouse person, etc. The order of their listing is not important; what is important is making sure you list every additional job type needed. In next column you will list the expected salary for that position. As you move across each row, enter the number of workers of each type and then whether you expect them to have any overtime during the year. You probably will not need this many, but we have allowed for five job types within this chart that are not already included in the production line description on the previous tab.

Remember, these are annual costs for staff who are regularly on-site. If these employees also help during a production run while they are being paid their salary – then you would NOT put in hours for them on a product (back on the Production Assumptions tab) or you will be double-counting their salaries. However, there is the possibility you could have someone working in your office as a part-time employee and you would put their annual salary here but then they might also fill in on production runs OUTSIDE of their office hours. In this case – you DO need to count their time on the appropriate production run also to accurately capture your total employee costs. The important point here is to not double count employee costs.

The next-to-the-last row of this chart is the information from the previous tab, "Production Assumptions".

Adding all these estimates together will calculate the last row on the chart called “Total Personnel Costs”, for the first year of operation of the leased kitchen.

<u>Market Projection tab</u>

This tab only requires you to enter one data point: the percent of kitchen capacity utilization for the first year of operation. This will most likely be 100%, but it might not. You may have to pay to

lease a kitchen larger than you need for the first year just to get access to a kitchen near your farm. Note that we estimate you will operate at 100% of capacity for the next nine (9) years of operation.

This tab will show you the contribution of each product you plan to make, by year, for the 10-year planning horizon. This could show you that some products actually lose you money, even if your total operation is showing a profit.

If this tab is showing all zeros, you should return to the tab "Production Assumptions" and fill in the mandatory "Annual Production Capacity %" box making sure the total is 100%.

Operating Loan tab

This tab has only two data points to enter. The main purpose of this tab is to remind you that accessing working capital is important and also quite common in developing a value-added operation. You may decide not to borrow any money, but your progress may be slower without access to capital that you can put to work in your new business when you really need it. It is appropriate for you to start thinking about how much money you might need to borrow, what you would use it for, what would you use as collateral, who you would get it from, and how you would pay it back.

The first green box, "Working Capital", is the amount of working capital you might plan to use as a normal course of your business. You can use different values for this number as you deal with "what if" questions for different models of your business.

Below that, "Short Term Interest Rate", is where you enter the estimated interest rate you will pay for the working capital you just input. This number can vary greatly. If you could get a loan from the USDA Farm Service Agency (FSA), their interest rate for operating loans for the last several years has been under 2%. Private venture capital might cost you 15 to 20%. Funds from quasi-governmental agencies such as Capital Farm Credit may cost you 8 to 12%.

Multiplying those two numbers together provides the figure calculated by the calculator called Yearly Interest Amount. This number becomes a business expense used on other tabs within this calculator.

Utilities Estimates tab

Sample data is provided and you can adjust the numbers in any green cell to be what you think your actual usage would be for your products. The person from whom you lease this kitchen should be able to help you with these utilities cost estimates.

Note: EVERYTHING below the wide black bar is ONLY to test your calculations and estimates. Once you think you have good numbers – then you must go up and key the final values you choose into the green cells above the black bar. ONLY data you put above the wide black bar will be used in subsequent calculations.

If your lease includes utilities, then you will not need to fill in this data.

Expense Projection tab

There are only a few green cells on this tab to adjust with your data and they are clearly labeled. PP&E is "property, plant and equipment". The rest of these values come from previously filled in tabs.

Note that you must fill in the estimated yearly cost of your facility lease each year rather than let it increase by the estimated annual inflation rate from year one. It is set up this way because we want you to notice that lease rates tend to go up much quicker than overall inflation rates. You may have a contract with a kitchen that shows no lease increases for two or three years. But it is possible, even probable, that when you renegotiate your lease payment, it will spike more than 2% to 3%.

Profit & Loss tab

Fill in your expected tax rate. Take into consideration that you're [hopefully] making money with this endeavor and you may fall into a higher tax category.

Return on Investment tab

This tab may not be applicable to your scenarios. If you choose to lease a kitchen to avoid investment, then you probably will be most interested in the "Profit & Loss" tab calculations. Only if you want to compare discounted rates of return from this business option with another business opportunity might you want to use this tab's data.

The return on investment (ROI) looks at the cash flows over the life of the project. It also considers the interest rate, or time-value of the money, which is a measure of what your company could be earning had you invested elsewhere. ROI basically reflects the compounded returns from the project. You should invest in projects with rates of return higher than your required rate of return. The required rate of return should reflect the interest rate paid on capital plus a premium for risk. One method of selecting a required rate of return is to determine the rate you would reasonably expect to receive if you purchased stock in companies with the same risk as your project.

For the only green block on this tab, put in the Discount Rate for NPV (Net Present Value) to be the minimal rate of return you consider acceptable for a 5 to 10 year horizon.

PLEASE NOTE: At this point, if you have still not assigned any money to pay yourself for managing this operation, do not consider this number a measure of Net Profit.