MSU Lamb Profit Calculator v2.0

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This tool uses animal performance data (conception rate, lambing rate, mortality, growth rates) along with feed prices, health, labor, energy, and marketing costs in order to produce an estimated profit per lamb sold or per ewe in the flock. It is not comprehensive for all farm costs, but covers basic variable costs that cover the majority of non-infrastructure and equipment costs on a sheep farm and are costs that can vary according to management practices and animal performance.

Comments for each row (red triangles in upper right corner) provide more details or a description of what the row is asking.

The “Comparisons” tab is where you enter the majority of your data (column B).  Column A tells you what the row is about, and Column C provides the units.  It uses values over one complete lambing cycle.  If your ewes lamb every 8 months instead of every 12, enter 8 in row 6.  If you have 2 lambing periods each year, but those ewes are still bred 12 months between breedings, this would still be 12 months in row 6, but you would enter the average conception rate across all breedings (rows 7 and 9 for mature ewes and ewe lambs, respectively).  For example, if I bred 25% of my mature ewes in April at 70% conception rate and 75% of the flock in October at 90%, this would be 0.25\*0.7+0.75\*0.9 = 0.85 or 85% conception rate in row 7.

Feed is entered as $/ton, and the calculator uses rows 2-11 of the Calculations page to adjust this to $/ton DM. If the feed DM is different than the base value of 85%, please adjust it accordingly for a more accurate profit calculation.

The market price for lambs at each potential sale weight (rows 54-68) allow for you to adjust current market prices to see how they will affect profit. You may also change the cull ewe and ram market prices in rows 70 and 71. Use the average market prices throughout the year to get an overall average impact of these prices on your profit.

Columns D-K are where you can enter in a different value from the "Base" scenario in Column B.  Those columns are set up to mimic the Base scenario that you input, but you may adjust them to see how slight changes will modify profit. For example, if my current lambing rate by mature ewes is 1.3 and I want to see how profit changes if this goes to 1.5, then I put 1.3 in cell B8 and 1.5 in cell D8. Those results will appear in Columns D-K on the final Profit compare page, so you can see what a change in any of these values will do to profitability or any other factor. So, I’d then look at the D column in the Profit compare page to see what affect this change had on my flock numbers and profit.

The “Finishing” tab looks at market lambs after weaning.  This page goes down rather than across like the Comparisons page. For the base scenario (rows 4-18), it automatically breaks down finishing lambs in 10 lb increments. For each increment, you may assign an average daily gain (ADG, lb/day), a feed:gain ratio, and input the feed cost. The feed cost is calculated from your previous input on row 40 of the Comparisons page ($/ton), but you may enter the price by hand in column G if the price varies across finishing. For example, if the feed price for my post-weaned to 80 lb lambs is $0.15/lb but the feed price from 80 lb to 125 lb is $0.12, then I adjust Column G accordingly.

You may enter your own observations for ADG (how many lbs do your lambs grow over how many days?) and for either a feed:gain ratio (if known) or your estimate of how much feed they consume (Column H). If you know how much the lambs consume at each weight, please enter in Column H (remember to exclude waste from what you feed), and it will calculate a feed:gain ratio for you based on Column H and Column E.

If you do not know the ADG or feed intake of your lambs, you may use templates we have provided in the ADG\_FG templates page. On this page are estimated ADG and feed:gain values for small, medium, and large framed sheep. Each frame size can be grown at a slow, medium, or fast rate. Please select the most appropriate rate for your size sheep. You can copy these values starting at the closest weaning size and going down until the rows stop (between 130 and 200 lbs).  There are 9 template options (3 frame sizes and 3 growth rates). Paste them in Columns E and F on the Finishing page.

When you enter values in rows 4-18 (Base scenario), these are copied for all other scenarios (A-H) unless you scroll down and change them specifically. So if I want to see what happens to profit if I grow my lambs more quickly, I can adjust Column E of rows 21-35. This will change the profit numbers of Scenario A in the same way as if I changed Column D in the Comparisons page (adjusts Column D in the Profit compare page).

Now that you have entered all data in the Comparisons and Finishing pages, you may look at the results in the “Profit compare” tab.  Rows 3-17 provide the profit per lamb sold and Rows 19-33 provide profit per ewe in the flock.  This is the anticipated profit per lamb or per breeding ewe if the lamb is sold at that weight. Since revenue and costs vary depending on how big the lamb is, each market weight provides a different profit value. This allows you to estimate the most profitable market weight.

Profit is the market revenue (market lambs, cull ewes, and replacement sales) minus feed costs for all animals, replacement purchases, health, labor, and other costs (including costs for growing ewe lamb replacements, plus market lambs and others who die).

Rows 36-43 provide some performance values that may be of interest.  Row 37 is the % of weaned lambs that will need to be kept back as ewe replacements if the flock maintains the same size (which can be useful to know and will vary depending on ewe and ewe lamb performance, mortality, and ewe replacement sales/purchases from the Comparisons page). Row 42 provides the number of weaned lambs per breeding ewe each year (if your breeding interval is shorter than 12 months, this will be higher than the value each lambing interval). Row 43 provides the number of market lambs sold per breeding ewe each year. Rows 42 and 43 are calculated on animal performance, replacement sales, and mortality, similar to the other calculated values.

The feed costs for various animal groups are in Rows 45-51, and are presented on a per breeding ewe per year basis. This format allows for more direct comparison of costs among the different animal groups and compared to others farm costs. Row 52 provides the total feed costs (includes all animal groups) per breeding ewe per year.

Row 57 provides the net revenue for sales of cull ewes and rams plus replacements.

Rows 71-85 are the feed costs for finishing a lamb to that particular weight (post-weaning until this weight). You may compare the feed costs of different finishing strategies by adjusting the ADG, feed:gain, feed costs, or feed intake on the Finishing page.

Rows 87-101 are the costs of transporting lambs, commission/marketing costs, checkoff dollars, and loss of weight due to shrink. This also varies slightly by lamb weight.

All of these values are factored into the profit values in Rows 3-17 and Rows 19-33. Again, please look at the associated comments (small red tabs) for an explanation of each row.