



# Valuation of Raised Breeding Livestock

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This fact sheet explains the valuation methods for raised breeding livestock and is a supplement to fact sheets in the financial statement series.<sup>1</sup> Valuation of raised breeding livestock differs from purchased assets in that the cost of raised breeding livestock is incurred over a longer period of time. For tax purposes, costs of raising livestock may be claimed as expenses in the year they are incurred; thus, no tax basis is established. For financial reporting, however, a method must be adopted to establish a cost basis for income calculations. Base-value and full-cost absorption methods are discussed further in the following summary. Producers may find the simpler method of base-value can prove to be more cost effective and suitable for decision making.

## Base Value

The base value of livestock represents the cost of raising an animal to its current condition. For example, the base value for cows is the cost of raising heifers from calves to freshening. The base value of a bred heifer is the cost of raising the animal to breeding age. Base value can be calculated by 1) the actual or estimated cost of raising the animal to its current status; 2) the market value of such animals when the base value is established; 3) "safe harbor" values provided by the IRS; or 4) other conventional practices followed by the business.

Raised breeding stock is not depreciated when using the base-value method. Instead, the expenses of raising livestock are included on the income statement as operating expenses. Revenues are adjusted on the income statement for changes in the number of raised breeding animals at each stage of growth, such as replacement heifers, using the base value. Revenues are adjusted by the change in base value as animals are transferred into the breeding herd or flock, or are moved into a different group, as with bred heifers to cows.

In most cases, the base value will remain constant for a number of years. However, as the costs of raising breeding stock change, periodic adjustments in the base value should be made to accurately reflect the value of the business. Changing the base values will influence net income, and thereby retained earnings. Two methods of maintaining base values are the

group-value approach and the individual-animal approach, which is rarely used.<sup>2</sup>

Under the group-value approach, breeding animals are assigned base values at the time the balance sheet is prepared. Transfer points for breeding livestock must be selected, as with calves, replacement heifers, bred heifers, and cows. The producer may assign a base value to the cost of attaining a live birth, or list young stock on the balance sheet as marketable livestock until replacements are selected. A base value estimating the costs of raising an animal from birth to each of its stages is used to measure the increase in cost, which is then used to adjust income and retained earnings. Transfer points such as age may be used, or a single transfer point, as when an animal is placed in service, are acceptable.

If a single transfer point is used, the recording of revenues resulting from the increase in cost basis will be delayed until the animal matures. Generally, this does not have a significant effect when the size of the herd remains constant, but can cause problems with comparability when the herd size changes.

All animals in each group, such as replacement heifers, have the same base value. No attempt is made to follow animals on an individual basis. When the base value is held constant from year to year, only changes in the number of animals in each group affects net income.

When a change in base values is made, pro forma statements from the previous period should be prepared using the new base values in order to compare statements in the current reporting period. The new base values are then held constant until another change is dictated by changing costs. The use of market value when selecting a base value for the group-value approach may require frequent changes and result in undesirable swings in net income.

If young replacement livestock are purchased and raised to production age, the purchase price should be recorded on the cost basis balance sheet until the animal enters another

<sup>1</sup> See OSU AGEC-791, "Schedules of Assets," OSU AGEC-752, "Developing a Balance Sheet," and OSU AGEC-753, "Developing an Income Statement."

<sup>2</sup> Under the individual-animal approach, a base value is established for each animal at the time it enters a group. This approach may be appropriate for small seedstock operations and race horse breeders. Base values for an individual animal are changed only when an animal enters a new group. When base values change, the new values are used only for animals that move into a new group. Thus, individual cows in a herd could have different base values at a point in time. When an animal enters a new group, the change in base value must be counted as income or loss. This procedure has an advantage in that base values can be changed frequently without requiring any calculation of the effect of change on net income. The change in base value is reflected as animals move into new groups. The effect on net income is gradual and occurs automatically.

age group. The purchase price plus the cost of raising the animal to this stage may not be materially different from the base value of raising an animal from birth (or hatching) to this stage. In this case, the animal's value may be estimated by the base value stipulated for the group entered. Otherwise, a different base value might be established for those which are purchased at a young age and those which are raised from birth.

### London Farm Case Example<sup>3</sup>

Jack and Julie London assign a base value to raised breeding livestock using the group-value approach. The average cost for replacement heifers at weaning age is estimated to be \$190, which is used as the base value for this group. It costs an additional \$190 to raise a replacement heifer to breeding age, making the base value for bred heifers \$380. The base value for a cow is \$475, as determined by the estimated total cost of raising a heifer calf from birth to production of her first calf.

The raised breeding female inventory on the balance sheet date is shown in Table 1. On the market value balance sheet, the total market value of replacement heifers, bred heifers, and cows, \$50,625 (the sum of \$3,825 + \$4,800 + \$42,000), is added to the market value of three purchased bulls (\$3,360), for a breeding livestock value of \$53,985 (balance sheet, line 15, column A).

During the year, eight weaned heifers will be identified as replacements and their total base value (8 x [\$190 - 0] = \$1,520) will be recognized as revenue (Table 2). The nine

replacement heifers will transfer to the bred heifer group with the increase in base value adding to revenues (9 x [\$380 - \$190] = \$1,710). Likewise, eight bred heifers should produce calves and transfer to the cow group. This transfer increases their value by \$95 per head, adding \$760 to income (8 x [\$475 - \$380]). The sum of these increases in base value, \$3,990 (the sum of \$1,520 + \$1,710 + \$760), is entered in the income statement on the line labeled "Change in Value Due to Change in Quantity of Raised Breeding Stock" (line 15).

Eight cows will be culled from the herd and sold. Gain or loss is determined by comparing the price received to the base value. If the eight cows are sold for \$3,510, a loss of \$290 results ((8 x \$475 base value/head) - \$3,510), as shown in Table 3. For the Londons, this loss on raised females, along with a \$40 loss from the sale of a bull, is entered in the income statement on the line labeled "Gain/Loss from Sale of Culled Breeding Stock" (line 14).

If market values are declining, the raised breeding livestock inventory one year from the beginning balance sheet date might have a lower market value per head, as well as a lower total market value (lower half of Table 1). The base value of raised females is not changed. However, the market value of each category of animal has declined and no significant increase in numbers has occurred, causing total market value to decrease. The total market value, \$47,375, is added to the total value for bulls, \$4,200, and the sum, \$51,575, is entered on the balance sheet (line 15, column B).

### Full-Cost Absorption

Full-cost absorption is a method for determining the cost basis of raised breeding livestock by accumulating (as opposed to expensing) all costs required to place the animal in production. Ideally, all direct and indirect costs required to bring breeding livestock into production should be included,

<sup>3</sup> For additional information on the London farm, see OSU Facts AGEC-751, "Developing a Cash Flow Plan," AGEC-752, "Developing a Balance Sheet," and AGEC-753, "Developing an Income Statement."

**Table 1. Schedule of Raised Breeding Livestock, 1/31/2001.**

| <i>Raised Description</i> | <i>Number of Animals 2/1/00</i> | <i>Base Value per Head</i> | <i>Total Base Value</i> | <i>Market Value per Head</i> | <i>Total Market Value</i> | <i>Transf. In</i> | <i>Transf. Out</i> | <i>Sold</i> | <i>Died</i> |
|---------------------------|---------------------------------|----------------------------|-------------------------|------------------------------|---------------------------|-------------------|--------------------|-------------|-------------|
| Repl. heifers             | 9                               | \$190                      | \$ 1,710                | \$425                        | \$ 3,825                  | 8                 | 9                  | 0           | 0           |
| Bred heifers              | 8                               | \$380                      | \$ 3,040                | \$600                        | \$ 4,800                  | 9                 | 8                  | 0           | 0           |
| Cows                      | 60                              | \$475                      | \$28,500                | \$700                        | \$42,000                  | 8                 | 0                  | 8           | 0           |
|                           | 77                              |                            | \$33,250                |                              | \$50,625                  |                   |                    |             |             |
| <b>1/31/01</b>            |                                 |                            |                         |                              |                           |                   |                    |             |             |
| Repl. heifers             | 8                               | \$190                      | \$ 1,520                | \$400                        | \$ 3,200                  |                   |                    |             |             |
| Bred heifers              | 9                               | \$380                      | \$ 3,420                | \$575                        | \$ 5,175                  |                   |                    |             |             |
| Cows                      | 60                              | \$475                      | \$28,500                | \$650                        | \$39,000                  |                   |                    |             |             |
|                           |                                 |                            | \$33,440                |                              | \$47,375                  |                   |                    |             |             |

**Table 2. Change in Value Due to Change in Quantity of Raised Breeding Livestock.**

|   | <i>Transferred<br/>In</i> | <i>Base Value<br/>Increase</i> | <i>Net Gain/Loss</i> |
|---|---------------------------|--------------------------------|----------------------|
| Repl. heifers                                   | 8                         | \$190                          | \$1,520              |
| Bred heifers                                    | 9                         | \$190                          | \$1,710              |
| Cows  | 8                         | \$95                           | \$ 760               |
| Total revenue<br>from increase<br>in quantities |                           |                                | \$3,990              |

**Table 3. Gain or Loss on Sale of Raised Breeding Stock.**

| <i>Animals<br/>Sold</i> | <i>Number<br/>of Animals</i> | <i>Base<br/>Value</i> | <i>Total<br/>Base Value</i> | <i>Total<br/>Cash<br/>Received</i> | <i>Net<br/>Gain/Loss</i> |
|-------------------------|------------------------------|-----------------------|-----------------------------|------------------------------------|--------------------------|
| Cows                    | 8                            | \$475                 | \$ 3,800                    | \$3,510                            | -\$290                   |
| Animals<br>Died         | Number<br>of Animals         |                       |                             |                                    |                          |
|                         | 0                            |                       |                             |                                    |                          |

although allocating many of the indirect costs is not usually worth the additional effort. For example, direct interest expense on a loan to purchase feed for raising breeding livestock is a legitimate cost of raising the animals and should be included in the cost of production. However, if the feed was purchased with cash, an operating loan used for other enterprises would probably have a higher balance. Thus, part of the interest on that loan could be charged as a cost of the raised breeding stock. A conservative approach is to include only the direct and indirect costs which may be readily identified as relevant to the raising of breeding livestock. Retained earnings may be slightly understated, but valuation equity will reflect the remaining value.

These costs are capitalized and the capitalized values are depreciated once the animal enters the breeding stock, becoming part of the breeding herd or flock. The undepreciated costs represent the cost of the animal for the cost-basis balance sheet.

At times, replacement livestock may be purchased at a young stage and raised to production age. When using the full-cost absorption method, the costs of raising the animal are added to the original purchase price. Then the non-recoverable portion of the total is depreciated during the productive years.

The full-cost absorption method requires more extensive records because it involves accumulating costs of individual animals or homogeneous groups of animals and maintaining depreciation records. A system must be established to identify each animal as costs are accumulated. The system must also record when the animal is placed in service and when the animal leaves the enterprise through sale, death loss, or other transfer.

The effect of accumulating the costs of raising breeding livestock is shown through the exchange of one asset (cash and other assets on hand which are used in the process) for a different asset (breeding stock). The exchange of assets does not impact retained earnings reported on the cost-basis balance sheet. The expenditure of assets, such as cash, to raise breeding stock represents payments for a capital purchase made over the period of time required to raise the animal(s). Any increase in value of raised breeding stock is shown on the market-value balance sheet and will be reflected in valuation equity.

The act of purchasing a capital asset results in neither income nor loss. Therefore, the change in the value of raised breeding stock is omitted from the income statement, as are the expenses incurred in the process. A portion of the non-recoverable cost of raising the animal(s) is recorded each year as a depreciation expense from the time of entry into the breeding herd or flock until disposal. This satisfies the principle of matching expenses to revenues (generated by the breeding stock) which is discussed in OSU AGE-753, "Developing an Income Statement."

## Summary

Those who prepare and use financial statements must select the method to be used for determining the cost basis of breeding livestock. The cost of measuring and recording data required for full-cost absorption or the base-value individual animal approach must be weighed against the potential value for farm management. The simpler group-value approach is generally more cost effective while providing satisfactory reporting for decision making.

When the herd size remains relatively stable, either method gives acceptable results. When the herd size is rapidly expanding or decreasing, the full-cost absorption method results in more accurate financial reporting because the costs of the animals are capitalized and depreciated over their productive lifetime, rather than being expensed while they are being raised.

The same method of valuation should then be used each year to provide consistency in reporting. The method used for valuing raised breeding livestock should be noted on the statements. If the method used to estimate value of breeding livestock is changed from one year to another, pro forma statements for the previous year should be prepared for comparison purposes.

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