#### Analyse the effect of increasing the herd size.

#### Exercise 1. What do they need to borrow?

Dave and Jodi are 50/50 sharemilkers, currently milking 210 cows. They have been offered a new position milking 390 cows. They currently have 210 mixed aged cows and 50 rising 1-year heifers. They will need to purchase 150 mixed age cows, 30 in-calf heifers and 30 rising 1-year heifers. They have adequate machinery for their new position, (value: $100,000 plus their car), and will have $45,000 debt at the end of this season. How much will their total term borrowings be?

Current market prices are;

* Mixed aged cows $1,800
* In-calf heifers $1,250
* Rising 1-year old heifers $600

**Answer**

|  |  |  |
| --- | --- | --- |
| **Purchases** | **Value** |  |
| 150 mixed aged cows | @ $1,800 each | = $270,000 |
| 30 in-calf heifer | @ $1,250 each | = $ 37,000 |
| 30 rising 1-year old heifers | @ $600 each | = $ 18,000 |
|  |  | = **$325,500** |
| **Plus debt** | @ $45,000 | = $370,000 |
|  | **Total term Borrowings** | **= $370,000** |

#### Exercise 2. How much could they borrow?

The bank will use the following values:

* $1,500 for mixed age cows
* $1,000 for in-calf heifers
* $500 for rising 1-year heifers

The bank will lend up to the following:

* 60% on stock
* 50% on plant

Using the above information, calculate the maximum term finance you could expect the bank to lend for the new position (Day 1) proposal?

**Answer**

|  |  |  |
| --- | --- | --- |
| **Assets** |  |  |
| Stock |  |  |
| Mixed aged cows | 360 @ $1,500 | = $540,000 |
| In-calf heifer | 30 @ $1,000 | = $ 30,000 |
| Rising 1-year old heifers | 50 + 30 = 80 @ $ 500 | = $ 40,000\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |  | = $610,000 |
| Plus Machinery |  | = $100,000 |
| Asset total |  | = **$710,000** |
|  |  |  |
| Maximum Term Finance |  |  |
| Stock | $610,000 @60% | = $366,000 |
| Machinery | $100,000 @50% | = $ 50,000\_\_\_\_\_\_\_\_\_\_\_\_ |
| Maximum term finance (will form liabilities) | | **= $416,000** |

#### Exercise 3. How much interest will they pay on the loan?

Dave and Jodi are paying an interest rate of 7.0% over a 5-year term, what is the annual cost of term finance to be included in the budget?

#### Formula: Maximum Long term finance X interest rate X time

**Answer** = $416,000 x 0.07 x 1 = **$29,120**

#### Exercise 4. Current situation with 210 cows

#### Assets

a. Dave and Jodi currently own the following stock and plant.

**Answers**

|  |  |  |
| --- | --- | --- |
| 210 mixed age cows, valued at | $ 1,800. each | = $378,000 |
| 50 yearling replacements, valued at | $ 600. each | = $ 30,000 |
| 80 horse power tractor, valued at | $45,000. | = $ 45,000 |
| Mower, valued at | $10,000. | = $ 10,000 |
| Tedder, valued at | $10,000. | = $ 10,000 |
| Calf feeding equipment, valued at | $ 2,000. | = $ 2,000 |
| Motorbikes (2), together valued at | $18,000. | = $ 18,000 |
| Assorted plant. | $15,000 | = $ 15,000 |
| Car, valued at | $15,000. | = $ 15,000 |
| Total assets | | **$523,000** |

#### Liabilities

b. They have a term loan with $45,000 still owing.

Currently, they are in overdraft of $10,000 in their seasonal finance account. Calculate their total liabilities

**Answer:** $45,000 + $10,000 = $55,000

c. Calculate Dave and Jodi’s current equity as a percentage of their total assets.

#### Equity = Assets – liabilities

**Answers**

|  |  |  |  |
| --- | --- | --- | --- |
| 210-cow operation | | 360–cow operation | |
| Assets | = $523,000 | Assets | = $710,000 |
| Liabilities | - $ 55,000 | Liabilities | - $416,000 |
| **Equity** | **= $468,000** | **Equity** | **= $294,000** |

d. Equity as a percentage of total assets is calculated by **Equity ÷ Assets X 100%**

**Answers**

**210-cow operation 360-cow operation**

Equity = $468,000 Equity = $294,000

Total assets = **÷** $523,000 Total assets = **÷** $710,000

Equity as a percentage = x 100 = **83%** Equity as a percentage = x 100 = **41%**

#### Exercise 5. Things to consider

List some likely causes of change between their forecast end of season financial position and the actual end of season financial position.

#### Drop in current season production

#### Drop in current season pay-out

#### Rise in costs

#### Unforeseen additional borrowings.

#### Exercise 6.

The 390-cow farm operation would have

Gross farm income = $546,000

Farm expenses = $312,000

Calculate the rate of return on assets for the farm (ROA)

ROA = Earnings before interest and tax ÷ assets x 100%

**Answer**

ROA = ($546,000 - $312,000) ÷ $710,000 = 0.3295 x 100 = **32.95%**

#### Exercise 7. Profitability

Calculate the profit of the 390-cow farm by:

Income – Farms expenses – interest = Profit

Answers - *Collect the information from previous questions*

|  |  |
| --- | --- |
| Gross Farm income | = $546,000 |
| Farm expenses | = $312,000 |
| Interest | = $ 29,120 |

Profit = $546,000 - $312,000 - $29,120 = $204,880

#### Exercise 8. Should they expand?

#### The current profit level of the 210-cow farm is $120,000. State whether Dave and Jodi should take up the offer of a new milking position milking 390 cows

Answer

The 390-cow position will make more profit at $204,880, so it is a better option. So yes, they should take up the new position.