Temperature Humidity Index

The following table presents the Temperature Humidity Index, calculated from temperature (in degrees fahhrenheit or centigrade) and relative humidity (%), highlighting its effect on cow stress and hence performance



Conversion of units of measurement

1 Abbreviations

mm	millimetre
cm	centimetre
m	metre
ml	millilitre
ppm	parts per million
k	kilo or thousands
М	mega or millions
MCal	megacalories
MJ	megajoule
MT	megatonnes
min	minute
hr	hour
d	day
mo	month
yr	year
mg	milligram
kg	kilogram
g	gram
J	joules
L	litre
lb	pound
ft	foot
hd	head
\$	dollar
с	cent
<	less than
>	greater than

2 Conversion of Imperial units to metric units

Length:	1 inch = 25.4 mm
-	1 foot = 30.5 cm
	1 yard = 0.91 m
	1 mile = 1.61 km
Volume:	1 cu ft = 0.028 cu m
	1 pint = 0.57 L
	1 gallon = 4.54 L
	1 bushell = 36.4 L
	1 acre foot = 1.23 Ml (megalitre)
Area:	$1 \operatorname{acre} = 0.40 \operatorname{ha}$
	1 sq mile = 2.59 sq km
Weight:	1 ounce = 28.3 g
	1 pound = 0.454 kg
	1 hundredweight = 50.8 kg
	$1 \log \tan = 1017 \text{ kg} (2240 \text{ lb})$
Energy	1 calorie = 4.19 joules
Density:	$1 \text{ lb/ft}^3 = 0.063 \text{ kg/m}^3$
Rate:	1 gallon/acre = 11.23 l/ha
	1 pound/acre = 1.12 kg/ha
	1 gallon/ton = 4.17 l/tonne
Pressure:	1 pound/sq in (psi) = 1.45 kPa (kilopascals)
Yield:	1 lb/ac = 1.12 kg/ha
Temperature:	$1^{\circ}F = ((9/5) * C) + 32$
	$1^{\circ}F = 0.56^{\circ}C$
	$50^{\circ}F = 10.0^{\circ}C$
	$60^{\circ}\text{F} = 15.6^{\circ}\text{C}$
	$70^{\circ}\text{F} = 21.1^{\circ}\text{C}$
	$80^{\circ}F = 26.7^{\circ}C$
	$90^{\circ}F = 32.2^{\circ}C$
	$100^{\circ}F = 37.8^{\circ}C$
	$110^{\circ}F = 43.3^{\circ}C$

3 Conversion of US units to metric units

Volume:	1 gallon = 3.79 L
	1 bushell = 35.2 L
Weight:	1 hundredweight = 45.4 kg
-	1 short ton = 907 kg (2000 lb)
Milk prices:	10/hundredweight = 22.0 c/L
Forage maize y	rields @ 30% DM:
	25 ton fresh weight/acre = 16.8 t DM/ha
Food energy:	1% unit TDN = 0.185 MJ/kg DM of metabolisable energy

30% TDN = 3.7 MJ/kg DM of ME 40% TDN = 5.5 MJ/kg DM of ME 50% TDN= 6.4 MJ/kg DM of ME 60% TDN= 7.4 MJ/kg DM of ME 70% TDN= 8.3 MJ/kg DM of ME 80% TDN= 9.2 MJ/kg DM of ME 1 MCal/lb = 9.22 MJ/kg 1 MCal/kg = 4.19 MJ/kg

4 Conversion of other specific country units to metric units

Most countries now use the metric units of measurement, however, certain countries have their own historical units, which are still used by farmers and advisers.

China

Length:	1 chi = 33 cm
	1 li = 500 m
Volume:	1 gongsheng = 1 L
Weight:	1 jin = 500 g
Thailand	
Length:	1 nui = 2.1 cm
	1 kheup = 25 cm
	1 sawk = 50 cm
	1 waa = 2 m
	1 sen = 40 cm
	1 yoht = 16 km
Weight:	1 baht = 15 g
	1 tamleung = 60 g
	1 chang = 1.2 kg
	1 haap = 60 kg
Area:	1 sq waa = 4 sq m
	1 ngaan = 400 sq m
	1 rai = 1.6 ha

Currency converter for South and East Asia

Instead of expressing costs and returns in one currency (conventionally US dollars), this manual makes use of currencies from various South and East Asian countries. For the reader's benefit, rather than convert them all to a single currency in the text, the following currency converter can be used to compare their values in March 2009. More up-to-date conversions can be obtained via the internet from a currency converter located at www.xe.com/ucc/.

	AFN	AUD	BDT	CNY	INR	IDR	MYR	PKR	PHP	LKR	тнв	USD	VND
AFN	х	32.4	0.690	6.90	0.94	3.93	12.9	0.585	0.976	0.412	1.32	47.1	2.69
AUD	0.03	х	0.021	0.213	0.029	0.012	0.399	0.018	0.030	0.013	0.041	1.456	0.083
BDT	1.45	46.9	x	9.99	1.36	5.69	18.7	0.846	1.41	0.597	1.911	68.20	3.901
CNY	0.144	4.69	0.100	х	0.135	0.057	1.871	0.085	0.141	0.060	0.191	6.826	0.390
INR	1.07	34.5	0.737	7.363	х	4.19	13.77	0.624	1.042	0.440	1.408	50.26	2.875
IDR	2.54	8.23	1.76	1.754	2.383	х	32.82	1.487	2.483	1.049	3.356	119.7	0.068
MYR	0.077	2.51	0.054	0.534	0.073	0.030	х	0.045	0.076	0.032	0.103	3.666	0.209
PKR	1.71	55.3	1.181	11.80	1.602	6.72	22.07	х	1.669	0.705	2.258	80.55	4.607
PHP	1.02	33.1	0.708	7.069	0.960	4.03	13.17	0.599	х	0.423	1.352	48.23	2.756
LKR	2.42	78.4	1.674	16.72	2.272	0.953	31.17	1.417	2.367	х	3.200	114.2	6.531
тнв	0.758	24.5	0.523	5.227	0.710	0.297	9.733	0.443	0.740	0.312	х	35.54	2.041
USD	0.021	0.687	0.015	0.146	0.019	0.008	0.273	0.012	0.021	0.009	0.028	х	0.058
VND	0.371	12.01	0.256	2.560	0.347	0.146	4.790	0.217	0.362	0.153	0.490	17.48	х

AFN: Afghanistan afghanis; AUD: Australian dollar; BDT: Bangladesh taka; CNY: China yuan renminbi; INP: India rupee; IDR: Indonesian rupiah x 100; MYR: Malaysian ringgit; PKP: Pakistan rupee; PHP: Philippines peso; LKR: Sri Lanka rupee; THB: Thai baht; USD: US dollar; VND: Vietnam dong x 1000

Tables of nutrient requirements

Information from these tables is required when completing Worksheet 1 on page 250.

Energy requirements for maintenance

Live	Energy requirements					
weight (kg)	MJ ME/day	kg TDN/day				
100	17	1.2				
150	22	1.5				
200	27	1.9				
250	31	2.2				
300	36	2.5				
350	40	2.8				
400	45	3.1				
450	49	3.4				
500	54	3.8				
550	59	4.1				
600	63	4.4				

Table A4.1 Energy requirements for maintenance (Ministry of Agriculture, Fisheries and Food 1984)

Energy requirements for pregnancy

Table A4.2Average daily energy requirements in the last four months of pregnancy (Ministry of Agriculture,
Fisheries and Food 1984)

Month of	Additional energy required				
pregnancy	MJ ME/day	kg TDN/day			
Sixth	8	0.6			
Seventh	10	0.7			
Eighth	15	1.1			
Ninth	20	1.4			

Energy requirements for activity

An allowance for grazing activity has been factored into the maintenance requirements in Table A4.1. In flat terrain, 1 MJ ME (or 0.1 kg TDN) per kilometre should be added to provide the energy needed to walk to and from the dairy. In hilly country, this increases up to 5 MJ ME (or 0.4 kg TDN) per kilometre.

Energy requirements for milk production

For analyses of data comprising milk fat and milk solids-not-fat (SNF), milk protein can be calculated as follows:

Milk protein (%) = SNF% - 5.4

Table A4.3Energy needed per kg of milk of varying composition, in MJ/kg of metabolisable energy (Ministry of
Agriculture, Fisheries and Food 1984)

Fat	Protein (%)									
(%)	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4
3.0	4.5	4.5	4.6	4.7	4.8	4.8	4.9	5.0	5.0	5.1
3.2	4.6	4.7	4.7	4.8	4.9	5.0	5.0	5.1	5.2	5.2
3.4	4.7	4.8	4.9	4.9	5.0	5.1	5.2	5.2	5.3	5.4
3.6	4.9	4.9	5.0	5.1	5.1	5.2	5.3	5.4	5.4	5.5
3.8	5.0	5.1	5.1	5.2	5.3	5.3	5.4	5.5	5.6	5.6
4.0	5.1	5.2	5.3	5.3	5.4	5.5	5.5	5.6	5.7	5.8
4.2	5.3	5.3	5.4	5.5	5.5	5.6	5.7	5.7	5.8	5.9
4.4	5.4	5.5	5.5	5.6	5.7	5.7	5.8	5.9	6.0	6.0
4.6	5.5	5.6	5.7	5.7	5.8	5.9	5.9	6.0	6.1	6.2
4.8	5.6	5.7	5.8	5.9	5.9	6.0	6.1	6.1	6.2	6.3
5.0	5.8	5.8	5.9	6.0	6.1	6.1	6.2	6.3	6.3	6.4
5.2	5.9	6.0	6.0	6.1	6.2	6.3	6.3	6.4	6.5	6.5
5.4	6.0	6.1	6.2	6.3	6.3	6.4	6.5	6.5	6.6	6.7
5.6	6.2	6.2	6.3	6.4	6.5	6.5	6.6	6.7	6.7	6.8
5.8	6.3	6.4	6.4	6.5	6.6	6.7	6.7	6.8	6.9	6.9
6.0	6.4	6.5	6.6	6.6	6.7	6.8	6.9	6.9	7.0	7.1

Fat	Protein (%)									
(%)	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4
3.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
3.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
3.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
3.6	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
3.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
4.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
4.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
4.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
4.6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
4.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
5.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5
5.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
5.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
5.6	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
5.8	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
6.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

 Table A4.4
 Energy needed per kg of milk of varying composition in kg/kg of total digestible nutrients (Ministry of Agriculture, Fisheries and Food 1984)

Energy requirements for changes in body condition

Table A4.5 The weight of one condition score on cows of different sizes (Target 10 1999)

Cow's approximate live weight (kg)	Additional weight to increase by one condition score (kg)
550	44
475	38
400	32

Table A4.6The energy a kilogram of body weight or condition needs or releases expressed either in MJ of ME orkg of TDN (Target 10 1999)

Change in body condition	Energy needed to gain 1 kg of weight (MJ ME or <i>kg TDN</i>)	Energy available from 1 kg of weight loss (MJ ME or <i>kg TDN</i>)
Late lactation gain	44 (3.1)	-
Dry period gain	55 (3.9)	-
Weight loss	_	28 (2.0)

Protein requirements

 Table A4.7
 Crude protein needs of a cow at different stages of lactation (Target 10 1999)

Milk production	Crude protein requirements
Early lactation	16–18%
Mid-lactation	14–16%
Late lactation	12–14%
Dry	10–12%

Fibre requirements

Table A4.8The absolute minimum percentage of fibre needed in a cow's diet for healthy rumen function, usingthree different measures of fibre (Target 10 1999)

Fibre measurement	Minimum amount of dietary fibre (% DM)
Neutral detergent fibre	30%
Acid detergent fibre	19%
Crude fibre	17%

Appetite limits

Table A4.9 Maximum daily intake of cows as affected by the NDF per cent of the diet (Linn and Martin 1989)

Live	NDF content (%)											
weight (kg)	25	30	35	40	45	50	55	60	65	70	75	80
100	4.8	4.0	3.4	3.0	2.7	2.4	2.2	2.0	1.8	1.7	1.6	1.5
150	7.2	6.0	5.1	4.5	4.0	3.6	3.3	3.0	2.8	2.6	2.4	2.3
200	9.6	8.0	6.9	6.0	5.3	4.8	4.4	4.0	3.7	3.4	3.2	3.0
250	12.0	10.0	8.6	7.5	6.7	6.0	5.5	5.0	4.6	4.3	4.0	3.8
300	14.4	12.0	10.3	9.0	8.0	7.2	6.5	6.0	5.5	5.1	4.8	4.5
350	16.8	14.0	12.0	10.5	9.3	8.4	7.6	7.0	6.5	6.0	5.6	5.3
400	19.2	16.0	13.7	12.0	10.7	9.6	8.7	8.0	7.4	6.9	6.4	6.0
450	21.6	18.0	15.4	13.5	12.0	10.8	9.8	9.0	8.3	7.7	7.2	6.8
500	24.0	20.0	17.1	15.0	13.3	12.0	10.9	10.0	9.2	8.6	8.0	7.5
550	26.4	22.0	18.9	16.5	14.7	13.2	12.0	11.0	10.2	9.4	8.8	8.3
600	28.8	24.0	20.6	18.0	16.0	14.4	13.1	12.0	11.1	10.3	9.6	9.0
650	31.2	26.0	22.3	19.5	17.3	15.6	14.2	13.0	12.0	11.1	10.4	9.8

Worksheets for ration formulation

This appendix contains copies of the three worksheets discussed in Chapter 4. The table numbers referred to within the worksheets are from Appendix 4 (Tables of nutrient requirements). These three worksheets should be photocopied to use with future ration formulations. They have been electronically incorporated into a new computer program (FEEDPROFIT) as discussed on page 138.

Worksheet 1: To co	alculate the	daily er	iergy, protei.	n and fibre needs of a c	0W					
The cow				Her energy needs	(MJ of ME)		Her protein need	S	Her fibre ne	eds
Cow live weight		۲	g	For maintenance (Table A4.1)						
Daily activity level	Terrain (1–5)	æ	Kg/km	For activity	Loom B ×	ΓΨ •	Early lactation Mid-lactation Late lactation Dry	16–18% 14–16% 12–14% 10–12%	(17% CF or NDF)	35%
Month of pregnancy		th D	Month	For pregnancy (Table A4.2)		₹ N				
Daily milk production	Volume	ш	Litres	For milk production (Table A4.3)						
	Fat test	ш о	% %		From E MJ/L	Γ <u>ν</u>				
Daily change in body	gain + loss -	r	Kg/cow	For or from condition (Table A4.6)	From H MJ/kg	z				
Total daily needs	of this co	:			Energy [ΓW + -	Crude	m above	NDF or fron	% %

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Worksheet 2: To calculate the energy, pro	otein and fibre content of a diet		
Dry matter	Energy (MJ	Protein	Fibre
Forage:			
V	•• [, [0
× ÷ 100 =	× ÷ 100 =	× ÷ 100 =	× ÷ 100 =
Kg/cow/day dry matter %	from A MJ/kg DM MJ/cow/day	from A Protein % kg/cow/day	from A NDF/CF % kg/cow/day
Supplement 1:			
B	5	¥ 	e
× +100 =	× ÷ 100 =	× + 100 =	× ÷ 100 =
Kg/cow/day dry matter % kg DM/cow/day	from B MJ/kg DM MJ/cow/day	from B Protein % kg/cow/day	from B NDF/CF % kg/cow/day
Supplement 2:			
υ	Ξ	Γ	Ø
× ÷100 =	× ÷ 100 =	× + 100 =	× ÷ 100 =
Kg/cow/day dry matter % kg DM/cow/day	from C MJ/kg DM MJ/cow/day	from C Protein % kg/cow/day	from C NDF/CF % kg/cow/day
Supplement 3:			
D	-	Μ	R
× ÷100 =	× ÷ 100 =	× ÷ 100 =	× ÷ 100 =
Kg/cow/day dry matter % kg DM/cow/day	from D MJ/kg DM MJ/cow/day	from D Protein % kg/cow/day	from D NDF/CF % kg/cow/day
Total daily dry matter intake	Total daily dry matter intake	Total daily protein intake	Total daily fibre intake
ш		Z	s [
A + B + C + D	F + G + H + I MJ/Cow	J + K + L + M	0 + P + Q + R
Total daily DM intake limit		Dectain % of ration	NDF/CF % of ration
Use T and Table A4.9, or			F
the formula $(120 \div T)$ kg/ ∞ w $\div 100 \times Iive weight$		N + E × 100	S + E × 100
Companying	Total daily energy	Crude protein requirement	Fibre requirement
Gow requirements			
	Kg	Kg	Kg

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Worksheet 3: The cost of nutrients in feeds (local currency units or LCU)

Appendix 6 Financial statements

The following tables were developed by the Target 10 (2004) team as part of a training package for Australian dairy farmers and advisers to assess changes in business performance of a dairy enterprise over a 12-month period. Most of the cost and income categories are relevant to Asian smallholder dairy farmers. The tables are based on Excel spreadsheets in which data are entered into the yellow (or light grey) cells with the spreadsheet automatically calculating data into the blue (or dark grey) shaded cells. Cells with no colour or shading are to be left empty. In the spreadsheet, the three tables are all incorporated into one spreadsheet, allowing automatic transfer of raw and derived data between the tables.

The three tables present the opening balance sheet followed by the closing balance sheet and finally, the combined cash flow and profit and loss statements. All these records are required to derive the financial KPIs needed to assess the business performance of the dairy enterprise. This program (FINSTATE) is available at no cost from the author, Dr John Moran, at john.moran@dpi.vic.gov.au or jbm95@hotmail.com.

1. Opening balance sheet

Table A6.1 is a stand-alone table as all the data automatically inputted into the dark grey cells originate from the corresponding data entered into the light grey cells. The following cells are calculated as:

Total assets = sum of all individual assets entered into the light grey cells

Total equity = sum of all individual equity values which are the same as those entered into the corresponding light grey cells

Equity % = $\frac{\text{Total equity}}{\text{Total assets}}$

	Assets	Liabilities	Equity
Cows			
Heifers			
Yearlings			
Feed			
Machinery			
Land & Improvements			
Shares			
Cash			
Liabilities			
TOTAL			
		Equity %	

Table A6.1The opening balance sheet summarising assets and liabilities at the beginning of the financial year(Target 10, 2004)

Light grey cells, for raw data; dark grey cells, for derived data; blank cells, to be left empty

Table A6.2The closing balance sheet summarising assets and liabilities at the end of the financial year(Target 10, 2004)

	Assets	Liabilities	Equity
Cows			
Heifers			
Yearlings			
Feed			
Machinery			
Land & Improvements			
Shares			
Cash			
Adjustments			
Liabilities			
TOTAL			
		Change in equity	
		Equity %	

Dark grey cells, for derived data; blank cells, to be left empty

Table A6.3	The combined cash flow statement and profit and loss statement the financial year being assessed
(Target 10, 2	004)

CASH FLOW STATEM	ENT	PROFI	T & LOSS STATE	MENT
INFLOWS	Receipts	Adjustments	Revenue	
Milk sales				
Feed sales				
Livestock sales				
Livestock profit/loss				
Machinery sales				
Land sales				
Land/improve appreciation				
Dividends				
Sundries				
Loan drawdowns				
TOTAL INFLOWS				
OUTFLOWS	Payments	Adjustments	Expenses	Interest/Tax
Pasture/feed				
Change in stored feed				
Purchased feed				
Herd & shed costs				
General O/H ex labour				
Actual labour				
Imputed labour				
Livestock purchases				
Machinery purchases				
Machinery depreciation				
Land/impr purchases				
Share deductions				
Principal repayment				
Principal interest				
Personal drawings				
Тах				
TOTAL OUTFLOWS				
				Net profit

Cash surplus/ deficit	EBIT	Net profit after tax
		Retained profit

Light grey cells, for raw data; dark grey cells, for derived data; blank cells, to be left empty

2. Closing balance sheet

Table A6.2 is not a stand-alone sheet as the data automatically entered in the dark grey shaded cells are all derived from Tables A6.1 and A6.3. The actual calculations are lengthy and sometimes rather complex but are easily understood from the cell formulae in the software program. The following cells are calculated as:

Adjustments = (sum of most of the adjusted inflows)

- (sum of most of the adjusted outflows) from Table A6.3

Total assets = sum of all individual assets derived in the dark grey cells

Total equity = sum of all individual equity values,

which are the same as those in the corresponding dark grey cells

Change in equity = (Total equity at Closing) – (Total equity at Opening)

Equity $\% = \frac{\text{Total equity}}{\text{Total assets}}$

3. Combined cash flow and profit and loss statements

Table A6.3 combines both these statements to facilitate the calculations of adjustments and the business KPIs. Profit and loss statements are also known as income statements. The adjustments convert cash receipts to revenue and also convert cash payments to expenses. The data input and calculations used in deriving revenue and expenses, hence business KPIs, are explained as follows:

Inflows

- Milk sales: Revenue = (Cash receipts) (Adjustment for any charges)
- Feed sales: Revenue = (Cash receipts) (Adjustment for any charges)
- Dividends: Revenue = (Cash receipts) (Cash payments, if dividend value decreases over 12 m)
- Sundries: Revenue = (Cash receipts) (Adjustment for any cash payments)
- Loan drawdowns: This receipt is used when generating liabilities in the closing balance sheet.
- Livestock profit/loss and Land & improvement appreciation are imputed values, hence not entered as cash receipts.

Outflows

- Pasture feed: Expense = (Cash payment) (Adjustment for any rebate)
- Change in stored feed: As well as an expense, this adjustment is used when generating the Feed asset in the closing balance sheet.
- Purchased feed: Expense = (Cash payment) (Adjustment for any rebate)

- Herd & shed costs: Expense = (Cash payments) (Adjustment for any rebates)
- General O/H (overhead costs) excluding labour: Expense = (Cash payments) (Adjustment for any rebates)
- Actual labour: Expense = (Cash payment) (Adjustment for any rebate)
- Imputed labour: It is entered as an adjustment to be automatically put in as an expense. It is also used in calculating retained profit.
- Share deductions: This payment is automatically entered in the shares cell as an asset in the closing balance sheet.
- Principal repayments: This payment is used to offset the opening balance sheet liability when generating liability in the closing balance sheet.
- Principal interest: When entered as an adjustment, it is automatically entered in the interest cell (hence used to calculate net profit).
- Personal drawings: This payment is used in calculating retained profit.
- Tax: When entered as a payment, it is automatically used in deriving the tax cell (which is used when calculating net profit after tax). When entered as an adjustment, not only is it used in deriving the tax cell, it is also used when calculating the total adjustments in the closing balance sheet.
- Changes in stored feed, imputed labour and machinery depreciation are all imputed values, hence not entered as cash payments.

Inflows/outflows

- Livestock transactions: All relevant transactions are automatically calculated and entered as revenue for livestock profit/loss. This is the sum of livestock sales and changes in livestock inventory value over the 12 months less livestock purchases.
- Machinery transactions: As machinery is a capital asset, machinery purchases and sales, when entered either as payments or receipts, are only used to derive cells in the closing balance sheet, which together with depreciation constitute change in total machinery asset value. Machinery depreciation is entered as an adjustment to be automatically put in as an expense.
- Land and improvement transactions: As land is a capital asset, land and improvement purchases or land sales, when entered either as payments or receipts, are only used to derive cells in the closing balance sheet, which together with land and improvement appreciation constitute change in total land and improvement asset value. Land and improvement appreciation is entered as an adjustment to be automatically put in as revenue.

The following financial measures are calculated as:

Total cash inflows = sum of all entered cash receipt items

Total cash outflows = sum of all entered cash payment items

Total revenue inflows = sum of all derived expense items

Total expenses outflows = sum of all derived expense items

Cash surplus/deficit = (total inflows) - (total outflows)

EBIT (earnings before interest and tax) = (total revenue) – (total expenses)

Net profit = (EBIT) - (interest)

Net profit after tax = (net profit) - (tax)

Retained profit = (net profit after tax) + (imputed labour) - (personal drawings)

Examples of expectation (7a) and evaluation (7b) forms for Farm Business Management workshops

(7a)

Improving the business skills of smallholder dairy farmers in Thailand Expectations from workshop

Location:
 Name:
 Address:
 Address:
 Position held (Farmer, DLD Officer, MCC staff etc.)
 How many milking cows do you have?

6. How many litres of milk each day do all your milking cows produce (on average)?

7. What topics would you like to learn about in this workshop?

a)	
b)	
c)	

Please rank the following questions for their importance to you (1 to 5), where 1 is not important/little and 5 is extremely important/lot

	Score
8. How important do you rate business skills to Thai smallholder dairy farmers?	
9. How do farmers rate the importance of business skills?	
10. Do you think farmers have knowledge of business skills?	
11. What is your current knowledge of business skills?	
12. Would you like to improve your current knowledge of business skills?	
13. How well do you think farmers understand the cost of milk production (Bt/L)?	
14. How well do you understand the cost of milk production (Bt/L)?	

(7b)

Improving the business skills of smallholder dairy farmers in Thailand Evaluation of workshop

1. Participant's name:.....

2. Expectations: What were your expectations of the program? Please list:

3. Outcome: What knowledge have you gained from this program?

4. Relevance of training:

Please describe how this training will be of use to your work.

5. Program delivery:

Please tick the appropriate space to indicate your views on the way the program has been delivered.

Please tick	Not enough	About right	Too much
Overall program			
Lectures and/or formal instruction			
Discussion			
Visits on site/fieldwork			
Reading matter provided			

6. Services:

How do you rate the services provided for you?

Please tick	Excellent	Good	Fair	Not good
Training/trainers				
Training location				
Other				

7. Other comments

8. Overall				
How do you ra	ate this program	?		
Excellent	Very good	Good	Not good	(Please tick)

9. What are the weaknesses of the program?

10. What improvements can be made for future programs?

11. List the most important messages/information that you found most useful to you.

12. List the least useful messages/information that you found least useful to you.

Please rank the following questions for their importance to you (1 to 5), where 1 is low/not much and 5 is high/a lot

	Score
How do you rate: 13. Farm visit	
14. Visit to Milk Collection Centre	
15. Small groups & reporting back sessions	
16. Quantifying costs on Bt/L milk	
17. Overhead presentations	
18. How do you rate importance of business skills in your job?	
19. How much have you improved your knowledge of business skills?	
20. How well will you be able to apply knowledge to farmer situations?	
21. When should you do a refresher course? 1, in 3 mo; 2, in 12 mo; 3, in 2 yr; 4, never	

Thank you for your participation in this workshop.