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FOR PROFITABLE, ADAPTIVE AND SUSTAINABLE PRIMARY INDUSTRIES

SEPTEMBER 2009 | PRIMEFACT 913 (REPLACES AGFACT M2.6)

Guide to machinery costs and contract rates

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Introduction

This Primefact has three aims:

- to alert farmers to the real costs of owning and operating machinery;
- to explain how contract rates are calculated, for those farmers deciding whether they should buy a piece of machinery or contract someone else's; and
- to assist those farmers wanting to contract out machinery by showing them how to properly calculate their costs. This will help them arrive at a fair and realistic fee. Commonly, farmers wanting extra income will contract out their machinery but they tend to undercharge.

Fixed costs (ownership costs)

Fixed costs are costs which don't vary with usage. You pay these costs every year regardless of whether you use your machine for 10 hours or 1,000 hours.

Examples of costs associated with owning machines are insurance, depreciation, interest (opportunity) cost, shedding, workshop and registration costs.

Insurance

Not all people insure their machinery separately; it is often covered by an overall farm insurance policy. Usually only self-propelled machinery would be insured separately, not tillage equipment.

A rule of thumb for estimating a machine's insurance cost is $10 for every $1,000 of the machine's average value (in other words 1%), but if you know the actual insurance cost for your machine then use that figure instead.

Estimated insurance cost/year = av. value ÷ 100

Depreciation

Depreciation is the decrease in a machine's value over time. It is the amount of money you must put away every year to be able to replace the machine at the end of its expected life.

Depreciation claimed for tax deductions must use either the 'straight line' depreciation method or the 'diminishing value' method. The depreciation rate for these methods is based on effective life. This is normally specified by the tax office but you can choose a different effective life if you can give the tax office a reasonable argument for variation.

The straight line depreciation method is the simplest way to estimate your machinery's depreciation. It distributes the decrease in the value of the machine over its lifetime. Take the price of a new machine (ignoring price differences due to any trade-in deals), subtract whatever price you would get for it at the end of its expected life, and divide by the number of years of use:

Depreciation cost = (new price - trade-in price) ÷ number of years used

Note: Complete calculations inside brackets first.

If you think the machine will have no value at the end of its working life then the trade-in price will be zero and the depreciation is just the current cost to replace the machine divided by its life expectancy.

If the machine loses more value in particular years and you want your contract rate to reflect these differences then you will have to estimate the depreciation for each year of its expected life. This

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is done by estimating a market value at the start of the year and the end of the year. The difference is the depreciation rate to be used for that year. If you use the market value method, the resultant contract rate you calculate will be higher in early years of machinery ownership and lower later on because a machine loses more value in its early years than in later years. This could cause confusion with clients and therefore a straight line depreciating system is suggested.

Interest cost

An interest cost (or opportunity cost) is the cost of using money. If you had invested your money instead of using it to buy the machine, it would have generated income. The interest cost we use in this situation is generally what could be earned with a bank deposit but if there are alternative investments that would earn a higher rate, the higher rate could be used. In other situations the contractor will be borrowing to finance the purchase of the machinery and in this case the interest rate charged by the lender is used.

Interest cost = average value x interest rate

Average value = (new price + trade in value) ÷ 2

For example if you buy a tractor for $60,824 and sell it later for $27,300 then the average value is half way between the purchase price and the selling price.

Average value = ($60,824 + $27,300) ÷ 2 = $44,062

Interest cost = $44,062 x 10% = $4,406 (assuming an interest cost of 10%)

Note: Make calculations inside brackets first.

Shedding cost

This is the cost associated with having a shed on your property which is used primarily to house your machinery. As a rule of thumb, an annual charge of 0.5%–1% of the purchase price of the machine is often used as an estimate of the cost of shelter.

Shedding cost = price of new machine ÷ 200

Alternatively, you can work out the depreciation cost of owning the shed and the proportion of the shed devoted to that machine; the shedding cost is the proportion of shed used by the machine multiplied by the yearly depreciation cost of the shed:

Shedding cost = yearly depreciation of shed x proportion of shed used by the machine

Workshop cost

If the machine is serviced and repaired on the farm, then a proportion of the depreciation and interest costs of the tools and workshop are due to the machine. The proportion depends on the time spent working on the machine in relation to the total time spent in the workshop or using the tools:

Workshop cost = proportion of workshop time used for machine x cost (depreciation & interest) of workshop and tools

Registration cost

If you are going to drive your machinery (say, a tractor) on the road you will incur a yearly registration cost. If you travel longer distances you may also have registration costs of a truck or a trailer to consider. In general, registration costs for a truck or trailer would only be included when contracting is the main reason for the expense. You can attribute a proportion of truck or trailer registration costs equivalent to the proportion of use in the contracting operation.

Registration cost = cost to register tractor (if applicable) + (cost to register truck or float x proportion of use)

Implements

Implements are generally assumed not to have an insurance cost, but generally do have depreciation and interest costs. These are worked out as shown under 'Depreciation' and 'Interest cost':

Depreciation cost (implements) = (new price - trade-in price) ÷ number of years used

Interest cost (implements) = average value x interest rate.

Estimating ownership costs on an hourly basis

To estimate what a yearly cost is on a 'per hour' basis, you must divide the yearly cost by the number of hours per year spent using the machine.

Because of this, the more hours per year you work the machine, the lower your hourly cost will be.

The number of hours per year your machine works will also affect its life expectancy and trade-in value, but these also depend on other things, such as maintenance and the type of work it performs.

The more accurate your estimate of the amount of work your machine will do, the more accurate your estimate of costs will be. To be on the safe side you should be conservative with your estimate of work (particularly if the work is not guaranteed) and with your estimates of trade-in value and working life of your machine.

Variable costs (operating costs)

Variable costs are those costs which vary in proportion to the machine's use. They are

sometimes called operating costs, because they occur only when the machine is operated.

The main variable costs for tractors and headers are fuel, oil, filters, tyres, tubes, batteries and repairs. For implements and other non-engine operated machinery, variable costs can be loosely taken as repair costs.

Variable costs can be accurately estimated if good machinery records are kept. Instruction manuals sometimes give information on typical fuel and oil usage and also expected life of any moving parts on the machine.

Fuel, oil and grease, and wearing parts

Fuel use varies proportionally with the power of the engine, and is affected by the loading. A rule of thumb for tractor fuel usage in L/hr under normal working conditions is: the pto power in kW divided by 4.

Filter life can be obtained from the retailers but their costs are significant and should not be ignored.

Fuel costs are included in the contract rate calculation and it has been assumed in Tables 2 and 3 that the contractor is not entitled to Federal diesel rebates. Full-time contractors are unable to claim this rebate.

Rebates and subsidies

Petroleum product subsidy scheme

Phone: 1300 305 191*

Fax: (02) 9689 6345

Email: petroleum.subsidy@osr.nsw.gov.au

For information on the Federal Rebates and subsidies contact:

Diesel Fuel Rebate Section
GPO Box 4042, Sydney NSW 2001
Phone: 1300 305 191*
Fax: (02) 9689 6345

Alternatively, you can test your eligibility for a rebate by using the fuel tax credit eligibility tool.

In some cases, the farmer you are contracting to may wish to supply the fuel in order to reduce costs, in which case it would be omitted from the variable cost calculation.

Fuel rebates are available on the cost of diesel if it is used for earning farm income. The Federal rebate was 38.143 c/L as of October 2008).

Labour costs

Labour costs depend on the type of labour used: casual, permanent or the farmers themselves. Casual labour costs are quoted on a 'per hour' basis. The hourly cost of permanent labour or your own labour depends on the value of the labour if it were spent on the most profitable alternative operation, or the value you place on your leisure time.

Repairs and maintenance

These costs must be included in a budget. Wear repairs are those associated with normal use (for example, the replacement of points or discs on a plough). Tractor part failures, on the other hand, tend to be more random and are harder to budget for. Both the standard of maintenance and the type of work influence how often failures occur.

If you have no idea what to allow for repairs and maintenance, a rule of thumb for 'normal' use is around 2% of the engine-operated machinery's replacement price or 2% of an implement's replacement price per year. This percentage will change according to the hours of work per year, especially if the machine is worked for long hours (as with a contractor's machine).

Timeliness costs

A timeliness cost is a reduction in returns (or an increase in costs) caused by an operation not being completed within the optimum time. The cost may not be of concern for a contractor but they must realise they are very important costs for the farmer.

Some examples of timeliness costs are:

A 4%–7% yield loss occurs for each week of delay after the optimum sowing time for wheat. Hence a timeliness cost is incurred if the sowing equipment cannot sow the area within the optimum time.

A crop may have to be harvested quickly because of the risk of storms during harvest time ruining the crop.

Delays in controlling weeds on a fallow block will mean less moisture is stored and future crop yields could be decreased.

Calculating timeliness costs – an example

Say, for example, that you have the area to plant 2,000 ha of wheat but your equipment can only plant 1,000 ha in the optimum time (ignoring weather problems for now).

If your budget on the last 1,000 ha being planted on average a week late which you estimate having a reduced yield of 5%, at an average yield of 2 t/ha, your timeliness cost is calculated as follows:

5% x 2 t/ha x 1,000 ha = 100 tonnes of wheat

At $250/t this is a timeliness cost of $25,000.

Timeliness costs are reduced by using larger tractors and machinery. However, higher ownership costs of larger equipment means that it is likely to

be uneconomic to having sufficient capacity to completely eliminate timeliness costs. The optimal size will be a point where the extra ownership costs of increasing the machinery mix to the next biggest size is matched by the reduction in timeliness costs. If reliable labour is available, a cheaper strategy is to work machinery in critical times around the clock rather than use a larger machine with one operator.

One way to combat timeliness costs is to have two or more tractors which can do the same job, so that if one breaks down the other can finish the job. The cost of owning the extra machine must be weighed against the chances of the first one breaking down and causing income to be lost through unfinished work.

An investment in a tractor much larger than would normally be used for the land area being cultivated is a form of insurance against unfavourable weather conditions, but once again you need to weigh the extra cost against the income that might be lost without the extra size.

Working out a contract rate

Allowing for contingencies

Contingencies are incidental expenses. When estimating machinery costs to calculate a contract rate, you should allow for at least the following contingencies:

- travelling and machinery transportation costs not already included in your fixed or variable costs
- accommodation if working away from home
- weather (for example, no work due to flood or drought). Weather is very important if you have permanent workers who are paid regardless of work availability
- phone, power and office rent
- fuel – sometimes the farmers prefer the contractors to supply the fuel. But contractors cannot claim the diesel rebate. Fortunately, it is more common for the farmers to provide the fuel as they can claim the diesel rebate.

These incidental expenses occur depending on how you run your business and what your work entails. You can add on some of these costs as they occur (such as overnight accommodation on jobs away from home, or transportation costs) and you can build the others into your contract rate (such as business phone, power costs, and work risk). In our example (see Table 3) we take 5% of the machinery and labour costs as the contingencies margin, and we assume that a float for the tractor and overnight accommodation do not need to be included.

Allowing for a profit margin

Unless you are doing someone a favour, a profit margin needs to be built into your contract rate to make doing the work worthwhile.

This can be done by adding a flat rate per hour on top of the contract rate, or by adding on a percentage of the machinery costs to the contract rate. Alternatively, if you are an owner-operator, you can accept the labour cost as your profit margin. In our example (see Table 3), we take 20% of the machinery and labour costs as the profit margin.

If you are doing the work for someone as a favour, it is important to ensure that at least all variable (operating) costs are covered when undertaking the work, otherwise you are effectively paying to do that work.

Converting to a cost per hectare

The information calculated in Tables 1 and 2 has all been in terms of a 'cost per hour'. Because quotes are often required on a 'cost per hectare' basis it is useful to be able to convert between the two. This can be done with the following calculation:

Cost per hectare (or $/ha) = cost per hour (or $/hr) ÷ operation speed in hectares per hour (or ha/hr)

'Operation speed' takes into account the fact that not all the time is spent covering ground. For example, when ploughing, only 80% of the time may be spent ploughing; the rest of the time could be spent turning around at the ends of the paddock, getting fuel, starting up and cooling down the tractor, checking the plough for blockages and so on. The proportion of time spent actually doing the job (ploughing) is called the field efficiency.

Thus, operation speed = machine speed (ha/hr) x field efficiency

Sometimes the speed is only known in km/hr. Remember that there are 1,000 metres per kilometre, and 10,000 square metres per hectare, calculate the machine speed in ha/hr as follows:

Machine speed (ha/hr) = (width (m) x speed (km/hr) x 1,000 m/km) ÷ 10,000 m/ha

which can be simplified to:

width (m) x speed (km/hr) ÷ 10

Establishing a contract rate

Now that you have calculated all the costs involved in owning, operating and contracting out your machine, you can add all these costs together (in the same units, say $/hr) to estimate a contract rate.

You should check your contract rate against other contractors in the area. If your rate is significantly

higher than most other people's it could be because the other contractors are getting more work, and therefore spreading their ownership costs over more people. It could also be that other contractors have not done their calculations properly and are undercharging.

On the other hand, if your rate is lower than the average rate in the area, check to make sure you have included all the associated costs. A difference may also occur if the existing contractors are the only ones around, and therefore can include a large profit margin. Alternatively, they may have built a large risk factor into their contract rate if the business is risky and affected by breakdown, weather factors, seasonality of work or other factors.

It is important to remember that the contract rate is based on the assumption that the machine will work a certain number of hours per year. Any change in this estimate will alter the costs per hour (of the overheads).

By accurately going through the procedure of estimating all these costs, you can be confident that you have at least covered the costs you incur and you will have some idea of the type of profit you are likely to obtain.

Contract rates versus ownership costs

When is it cheaper to own and operate your own machinery rather than use a contractor?

When you own your own machinery, the ownership costs are spread over the amount of work you do. In our example (see Table 1) the ownership cost for the tractor is $12,472 a year. If the tractor works 1,000 hours a year, the ownership costs (overheads) are spread over 1,000 hours and are therefore $12.47 per hour. However, if the tractor works 2,000 hours a year, the ownership costs per hour are then lowered to $6.24 per hour. As you can see, the more work done per year, the more the ownership costs are spread, and the lower they are on a unit (per hour or per hectare) basis.

Since the operating costs are calculated on a 'per hour' basis they do not vary with the amount of work completed. (That is, if operating costs are $22.00/hr for 1,000 hours, they remain at $22.00/hr for 2,000 hours.)

When you use a particular machine for only a very small amount of work, the ownership costs are relatively high, and it is generally cheaper to call in a contractor, but the more work per year a machine does, the cheaper the cost per hour.

So how much work must a machine do to be cheaper than the contract rate for that job?

The point at which owning and operating your own machine equals the contract rate is called the 'break-even point'. This break-even point can be the number of hours per year of work, the number of hectares per year, or even the number of bales of hay baled per year.

For comparison purposes, you should use the same unit that the contract rate is charged at, whether it be per hectare, per hour or per bale.

Of these, the most commonly applied unit is hectares. In other words, the most commonly asked question is: 'what is the minimum number of hectares that would make it worthwhile for me to own and operate my own machinery?'

To know the break-even point in hectares you need to know everything in the calculation on a 'per hectare' basis.

Thus, break-even point is reached when:

Machinery ownership cost ($/ha) = contract rate ($/ha)

where,

Machinery ownership cost ($/ha) = ownership costs ($/yr) ÷ work (ha/yr) + operating costs ($/ha)

Therefore break-even point is reached (substituting this into the equation) when:

(ownership costs ($/yr) ÷ (ha/yr)) + operating costs ($/ha) = contract rate ($/ha)

We can rearrange this to:

Ownership costs ($/yr) ÷ ha/yr = contract rate ($/ha) - operating costs ($/ha)

and then to:

Ownership costs ($/yr) ÷ (contract rate ($/ha) - operating costs ($/ha)) = ha/yr

or, in other words:

(Minimum) hectares per year = ownership costs ($/yr) ÷ [contract rate ($/ha) - operating costs ($/ha)]

This is the minimum number of hectares you must be operating on each year to make it cheaper to own your equipment rather than using a contractor.

If you think that there may be an extra cost in using the contractor then this should be included in the contract rate cost.

For example, you might think it is likely that you will lose some of your yield because the contractor is often late, or does not do a thorough job. In that case you must estimate what the normal loss is (on a $/ha basis) and add this to the cost of the contract rate.

So the equation would then appear as:

(Minimum) hectares per year = ownership costs ($/yr) ÷ [contract rate ($/ha) + contracting loss ($/ha) - operating costs ($/ha)]

Using the information calculated in Table 3 for the tractor and plough we can work out the minimum number of hectares a farmer should plough annually to justify the purchase of a tractor and plough. A common usage for this same formula is to work out the minimum number of hectares a farmer would need to justify fodder conservation equipment.

Using the figures calculated in Table 3:

1. Ownership costs (in $/yr)

= $12,472/yr + $3,075/yr

= $15,547/yr

2. Operating costs (in $/ha)

= $21.61/hr + $2.20/hr

= $23.81/hr ÷ 2.4 ha/hr

= $9.90/ha

3. Loss from contracting (in $/ha) is assumed to be none and appears below as $0

4. Contract rate (in $/ha – from Table 3)

= $44.70/ha

Minimum number of hectares per year required:

= $15,547÷ ($44.70 + $0 - $9.90)

= $15,547 ÷ 34.80

= 447 ha

Therefore, if the farmer required a tractor and plough for more than 447 ha per year it would be cheaper for him to own and use his own equipment rather than use a contractor.

Keep in mind that a paddock is typically worked more than once in a year. By ploughing a 300 ha block twice you are effectively covering 300 ha x 2 = 600 ha. In the example above, 600 ha per year would be more than the area required to justify the equipment.

Acknowledgements

This Primefact is a minor update of a previous publication produced by Kim Frazer formerly, economist, Trangie, and Julie Lynch formerly economist, Agcost, Parkes.

The following example is based on the guide on machinery and implement costs for Case JX1090U or JD 6230 tractor with specification of 57 KW PTO (76 HP) AND 70 KW ENGINE (95 HP). The guides to other machinery and implement costs for other tractors and specifications can be accessed online via www.dpi.nsw.gov.au/agriculture/farm-business/budgets/machinery-water

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ISSN 1832-6668

Replaces Agfact M2.6

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (September 2009). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of Industry & Investment NSW or the user's independent adviser.

Job number 9363 PUB09/80

Table 1. An example of fixed (ownership) costs (A) for the above tractor and (B) an implement.

A. For an engine-operated machine (e.g. a tractor)

Information required	**Example**	
1. New price: Cost of replacing your machine with new	$ 60,824	
2. Interest rate: Interest rate on borrowing	10%	
3. Age at trade-in: Age you intend to sell or trade-in	5 years	
4. Yearly work (hrs): Likely number of hours' work per year	1,000 hrs/year	
5. Trade-in value: Expected trade-in or salvage value	$27,300	
6. Total workshop cost: Cost of workshop and tools	$1,000	
7. Workshop time spent on tractor:	40%	
Ownership costs	**Example**	**Answer**
Average value = purchase price + trade-in price / 2	(\$60,824 + \$27,300) / 2	\$44,062/yr
1. Depreciation cost = (new price - trade-in price) / age at trade-in	(\$60,824 - \$27,300) / 5 years	\$6,705/yr
2. Interest cost = average value x interest rate (10%)	\$44,062 x 0.1	\$4,406/yr
3. Insurance cost (if insured) = average value x 1%	\$44,100 x 0.01	\$441/yr
4. Shedding cost (if shedded) = new price x 0.5%	\$44,064 / 200	\$220/yr
5. Workshop cost (if maintained on farm) = total workshop costs x % workshop time on tractor	\$1,000 x 0.4	\$400/yr
6. Registration cost (if registered) = RTA registration cost for tractor		\$300/yr
Total ownership costs per year	total of sums above (1–7)	**\$12,472/yr**
Total ownership costs per hour = total overhead costs per year / number of hours worked per year	\$12,472 / 1000	**\$12.47/hr**

B. For an implement (e.g. a plough)

Information required	**Example**	
1. New price: Cost of replacing your implement with new	$22,000	
2. Interest rate: Interest rate available on borrowing	10%	
3. Age at trade-in: Age you intend to sell or trade-in	9 years	
4. Yearly work (hrs): Likely number of hours' work per year	200 hrs/yr	
5. Trade-in value: Expected trade-in or salvage value	$7,700	
Ownership costs	**Example**	**Answer**
Average value = purchase price + trade-in price / 2	$22,000 + $7,700 / 2	= 14,850/yr
1. Depreciation cost = new price - trade-in price / age at trade-in	$14,850 - $7,700 / 9 years	= $1,590/yr
2. Interest cost = average value x interest rate	$14,850 x 10%	= $1,485/yr
3. Insurance cost (generally not included)		
4. Shedding cost (generally not included)		
5. Workshop cost (generally not included)		
6. Registration cost (not applicable)		
Total ownership costs per year	total of sums above (1 & 2)	**= $3,075/yr**
Total ownership costs per hour = total ownership costs per year / number of hours worked per year	$3,075/yr / 200/yr	**= $15.38/hr**

Table 2. An example of variable (operating) costs for (A) a machine and (B) an implement.

A. For an engine-operated machine (e.g. a tractor)*

Item	Number	Cost	Rate or life	Variable Costs Summary*	
Diesel fuel	-	$1.12/L	15 L/hr	**FUEL:**	$16.80/hr
Engine oil Transmission oil	- -	$6.40/L $6.00/L	10 L/250 hrs 100 L/1,000 hrs	**OIL:**	$0.86/hr
Air filter (inner) Air filter (outer) Fuel filter Hydraulic oil filter Oil filter Transmission oil filter Transmission filter	1 1 1 1 1 1 1	$50/filter $62/filter $30/filter $70/filter $13/filter $70/filter $70/filter	1,500 hrs 1,500 hrs 500 hrs 750 hrs 250 hrs 750 hrs 750 hrs	**FILTERS:**	$0.48/hr
Tyres (large) Tyres (small)	2 2	$2,275/tyre $1,150/tyre	3,500 hrs 3,500 hrs	**TYRES**	$1.96/hr
Batteries	2	$438/battery	1,000 hrs	**BATTERIES:**	$0.29/hr
Repairs & maintenance[ß]		2% tractor price/yr[Ü]		**REPAIRS:**	$1.22/hr
Total operating costs					**$21.61/hr**

* Costs/hr = rate x cost or number x cost ÷ life.

[ß] It is much more accurate to use actual information on repair and maintenance costs
[Ü] = 2% of $60,824 ÷ 1,000 hrs based on figures in table 1

B. For an implement (e.g. a plough)

Item	Calculation (if actual figures unknown)[ß]	Total costs
Repairs & maintenance	2% of $22,000 ÷ 200 hrs/yr[Ü]	**$2.20/hr**

[ß] It is much more accurate to use actual information on repair and maintenance costs.
[Ü] New price and yearly work (hrs) based on figures in Table 1.

Table 3. Calculating a contract rate that covers costs and provides a profit margin – example.

Costs sub-total (ownership + operating)	ownership costs ($/hr) *plus* operating costs ($/hr) for tractor & plough	**$12.47 + $15.38/+$21.61 + $2.20** = $51.66/hr
		Tractor plus Plough
Job costs sub-total ($/hr)	cost above plus labour ($17/hr)	A $68.66/hr
contingency margin ($/hr)	5% of job costs sub-total	B $3.43/hr
profit margin ($/hr)	20% of job costs sub-total	C $13.73/hr
Margins sub-total ($/hr)	contingency margin ($/hr) *plus* profit margin ($/hr)	D $17.16/hr (= B+C)
hourly contract rate ($/hr)	job costs sub-total ($/hr) *plus* margins sub-total ($/hr)	E $85.82/hr (= A+D)
work rate (ha/hr)[x]	depends on tractor size	F 2.4 ha/hr
efficiency factor (%)		80% field efficiency
operation speed (ha/hr)	speed x efficiency factor	G 1.92 ha/hr (= Fx0.8)
Hectare contract rate ($/ha)	hourly contract rate ($/hr) / operation speed (ha/hr)	H $44.70/ha (E÷G)

*as calculated in Table 1

Your calculations: ownership costs for (A) a machine and (B) an implement.

A. For an engine-operated machine (e.g. a tractor)

Information required	**Example**	
1. New price: Cost of replacing your machine with new	$_____	
2. Interest rate: Interest rate available on bank deposits	_____ %	
3. Age at trade-in: Age you intend to sell or trade-in	_____ years	
4. Yearly work (hrs): Likely number of hours' work per year	_____ hrs/year	
5. Trade-in value: Expected trade-in or salvage value	$_____	
6. Total workshop cost: Cost of workshop and tools	$_____	
7. Workshop time spent on tractor:	_____ %	
Ownership costs	**Example**	**Answer**
Average value = purchase price + trade-in price / 2	($_____ + $_____) / 2	$_____/yr
1. Depreciation cost = (new price - trade-in price) / age at trade-in	($_____ - $_____) / _____ years	$_____/yr
2. Interest cost = average value x interest rate	$_____ x ___%	$_____/yr
3. Insurance cost (if insured) = average value x 1%	$_____ x 1%	$_____/yr
4. Shedding cost (if shedded) = new price x 0.5%	$_____ x 0.5%	$_____/yr
5. Workshop cost (if maintained on farm) = total workshop costs x % workshop time on tractor	$_____x ___%	$_____/yr
6. Registration cost (if registered) = RTA registration cost for tractor		$_____/yr
Total ownership costs per year	total of sums above	**$_____/yr**
Total ownership costs per hour = total overhead costs per year / number of hours worked per year	$_____/yr / _____hrs/yr	**$_____/hr**

B. For an implement (e.g. a plough)		
Information required	**Example**	
1. New price: Cost of replacing your machine with new	$_____	
2. Interest rate: Interest rate available on bank deposits	_____ %	
3. Age at trade-in: Age you intend to sell or trade-in	_____ years	
4. Yearly work (hrs): Likely number of hours' work per year	_____ hrs/yr	
5. Trade-in value: Expected trade-in or salvage value	$_____	
Ownership costs	**Example**	**Answer**
Average value = purchase price + trade-in price / 2	$_____ + $_____ / 2	= _____ /yr
1. Depreciation cost = new price - trade-in price / age at trade-in	$_____ - $_____ / _____ years	= $_____/yr
2. Interest cost = average value x interest rate	$_____x _____ %	= $_____/yr
3. Insurance cost (generally not included)		
4. Shedding cost (generally not included)		
5. Workshop cost (generally not included)		
6. Registration cost (not applicable)		
Total ownership costs per year	total of sums above	= **$_____/yr**
Total ownership costs per hour = total ownership costs per year / number of hours worked per year	$_____/yr / _____ hrs/yr	= **$_____ /hr**