9. CALCULATING MACHINERY COST

CHAPTER OBJECTIVES:

- ***To introduce the reader to the terms that are being used to calculate machinery cost;***
- ***To describe the calculation of tractor and implement cost;***
- ***To calculate the total machinery cost for a specific crop;***
- ***To explain the cost of machinery storage;***
- ***To discuss the use of machinery records in cost calculations.***

For many crop farmers all over the world, the cost of machinery is the largest single input after land and buildings. It is important then for farmers to know the cost of that part of their enterprise in order to approach machinery management in an economical way. Many farmers assume that equipment is simply a necessary part of their operation and they purchase and operate the equipment regardless of the cost involved. However, this cost is increasing due to inflation and the increasing level of technical sophistication. Even after recent changes in cropping practices, which reduced fuel consumption on many farms, the capital investment level in machinery has changed very little. Machinery cost therefore remains a key farm management issue. The farmer must be able to calculate this cost and understand how it is related to machinery use.

9.1. CALCULATIONS

The principles discussed in Part II, namely matching tractors and implements as well as the planning of field operations, will come into effect in this chapter. The relationship of cost and usage, and the valuing of machinery over time, will also be used in calculating tractor and implement cost.

9.1.1. DEFINITION OF TERMS

The cost structure and the different cost components of machinery cost are described and defined in Chapter 2. These formulas will be used in this chapter to calculate tractor and implement cost. The basic definition is that the cost of owning the machine is normally a fixed cost and is considered an overhead cost while operating cost is also referred to as variable or direct cost, because they vary directly with the amount of machinery use.

9.1.2. ASSUMPTIONS

When calculating machinery cost, certain assumptions must be made regarding interest rates, the inflation rate, discount rates, etc as the circumstances under which a farmer operates can differ from country to country and from farm to farm. The following assumptions are used in this chapter to calculate tractor and implement cost:

- Tractor life time: 10 years
- Annual working hours of tractor: 500 hours
- Daily available working hours: 10 hours
- Investment rate: 11%
- Inflation rate: 3%
- Real financing interest rate: 5%
- Discount on purchase price: 10%
- Insurance rate: 0.85%
- Currency: USA dollar
- Tractor license fee: $0.00
- Fuel price: $0.26/liter

These assumptions can easily be changed to fit any country or specific farm.

Table 9.1 provides the spreading of the inflation rate over ten years at an annual rate of 3%.

TABLE 9.1: SPREADING OF THE INFLATION RATE OVER TEN YEARS AT A RATE OF 3% PER ANNUM

Year	Factor
1	1.00
2	1.03
3	1.06
4	1.09
5	1.13
6	1.16
7	1.19
8	1.23
9	1.27
10	1.30
TOTAL	**11.46**

Table 9.1 can be used to calculate a list price of a tractor or implement in the future.

9.1.3. TRACTOR COST

As discussed in Chapter 4, matching tractors and implements is a practice used by farmers whenever they engage in applying equipment. It is therefore appropriate to approach machinery cost in the same way. Calculating machinery cost starts by determine tractor cost. The calculation of tractor cost is shown in Table 9.2 for a John Deere 7510.

TABLE 9.2: CALCULATION OF TRACTOR COST FOR A JOHN DEERE 7510

MODEL	**JOHN DEERE**		
DETAILS	**7510 MFWD**		
kW		85	
Hours per annum		500	
PRICE:	**Per kW**	**Total**	**Per hour**
Current list price	$ 823.53	$ 70,000.00	$ 14.00
Purchase price	$ 741.18	$ 63,000.00	$ 12.60
Remaining value after 10 years	$ 645.26	$ 54,847.27	$ 10.97
COST:	**Per kW**	**Per annum**	**Per hour**
Labor	$ 705.88	$ 60,000.00	$ 12.00
Ownership cost	$ 50.14	$ 4,262.31	$ 0.85
Maintenance cost	$ 4.75	$ 404.03	$ 0.81
Repair cost	$ 53.52	$ 4,548.92	$ 0.91
TOTAL COST	**$ 814.30**	**$ 69,215.26**	**$ 14.57**

According to Table 9.2, the total cost per hour of operating a John Deere 7510 is $14.57. This does not include the cost of the implement and also does not include fuel cost, as this will be calculated as part of implement cost. At this stage the cost is calculated per hour. It will be converted to cost per hectare as soon as the working tempo (hectares/hour) of the implement it is towing is available.

Labor

The labor cost reflects the annual salary of the tractor operator.

Ownership cost

The calculation of ownership cost is shown in Table 9.3.

TABLE 9.3: CALCULATION OF OWNERSHIP COST FOR A JOHN DEERE 7510

OWNERSHIP COST	Per kW	Per annum	Per hour
- Depreciation	$ 9.59	$ 815.27	$ 1.63
- License	$ -	$ -	$ -
- Insurance	$ 5.89	$ 500.85	$ 1.00
- Financing cost	$ 34.66	$ 2,946.18	$ 5.89
TOTAL	**$ 50.14**	**$ 4,262.31**	**$ 8.52**

The total ownership cost is calculated as $8.52 per hour in Table 9.3.

Notes:

- Depreciation = $\frac{\text{Purchase price - Remaining value}}{\text{Economic life}}$

  (In this case the high inflation causes the list price to rise rapidly over 10 years and nearly offsets the economic depreciation. Therefore the remaining value after 10 years stays almost the same as the purchase price.)

- Purchase price = List price - Discount

- Remaining value = Current list price x inflation factor for Year 10 x Calculated Cross & Perry factor
  (*In this case the Cross & Perry factor, as described in Chapter 8, is 48.19%)*

- There is no license fee applicable in this case.

- Insurance = Rate x (Purchase price - Remaining value)

- Financing cost = Rate x $\frac{\text{(Purchase price + Remaining value)}}{2}$

Maintenance

The calculation of maintenance cost is shown in Table 9.4.

TABLE 9.4: CALCULATION OF MAINTENANCE COST FOR A JOHN DEERE 7510

MAINTENANCE	Hours	Price/unit	Per hour
Oil:			**$ 0.28**
- Machine oil	150	$ 30.55	$ 0.20
- Transmission oil	1500	$ 109.80	$ 0.07
Filters:			**$ 0.33**
- Air filter (primary)	600	$ 27.95	$ 0.05
- Air filter (secondary)	600	$ 54.95	$ 0.09
- Diesel filter	450	$ 12.45	$ 0.03
- Hydraulic oil filter	450	$ 29.35	$ 0.07
- Oil filter	150	$ 8.30	$ 0.06
- Transmission oil filter	1500	$ -	$ -
- Air cleaner filter	750	$ 32.61	$ 0.04
Tires:			**$ 0.15**
- Front	3000	$ 185.00	$ 0.06
- Rear	4000	$ 355.00	$ 0.09
Battery:	2000	$ 101.80	$ 0.05
TOTAAL			**$ 0.81**

The maintenance cost is calculated by dividing the unit price of each maintenance item by the hours it is in use before it needs to be replaced. The hourly cost of all the individual items adds up to the total hourly maintenance cost of the tractor. According to Table 9.4, the maintenance cost is calculated as $0.81 per hour.

It is not necessary to separate the maintenance cost from the total repair cost. It is just convenient to know the maintenance cost as this will be the same for old or new tractors where the repair cost will increase as the tractor gets older.

Repairs

The calculation of total repair cost is shown in Table 9.5.

TABLE 9.5: CALCULATION OF TOTAL REPAIR COST FOR A JOHN DEERE 7510

REPAIR & MAINTENANCE	Inflation factor	Projected List price	Repair Factor	Cost over life time
- Year 1	1.00	$ 70,000.00	0.0150	$ 1,050.00
- Year 2	1.03	$ 72,100.00	0.0305	$ 2,199.05
- Year 3	1.06	$ 74,263.00	0.0415	$ 3,081.91
- Year 4	1.09	$ 76,490.89	0.0508	$ 3,885.74
- Year 5	1.13	$ 78,785.62	0.0592	$ 4,664.11
- Year 6	1.16	$ 81,149.19	0.0667	$ 5,412.65
- Year 7	1.19	$ 83,583.66	0.0738	$ 6,168.47
- Year 8	1.23	$ 86,091.17	0.0804	$ 6,921.73
- Year 9	1.27	$ 88,673.91	0.0866	$ 7,679.16
- Year 10	1.30	$ 91,334.12	0.0927	$ 8,466.67
TOTAL	**11.46**			**$ 49,529.50**

** The repair factor refers to the relationship of cost and usage discussed in Chapter 7 and is shown in Table 7.3 in that chapter.*

The cost of total maintenance and repairs is calculated as $49,529.50 in Table 9.5 over the projected ten-year life of the tractor and averages $4,952.95 per annum. This includes maintenance. Therefore, repairs on its own can be calculated by deducting maintenance cost, shown in Table 9.2 as $404.03, from the $4,952.95 to give $4,548.92 per annum.

9.1.4. IMPLEMENT COST

Once the tractor cost is calculated, the cost of the implement can be calculated in the same way. The calculation of implement cost for a 3.4 meter wide chisel plow is shown in Table 9.6.

TABLE 9.6: CALCULATION OF IMPLEMENT COST FOR A 3.4 M CHISEL PLOW

MODEL DETAILS:	CHISEL PLOW	
Width (m)	3.4	
Power required (kW)	85	
Speed (k/h)	7	
Efficiency (%)	84	
Tempo per hour (ha)	2	
Capacity per day (ha)	20	
Annual use (ha)	250	
PRICE:	**Total**	
Current list price	$ 6,555.00	
Purchase price	$ 5,900.00	
Remaining value after 10 years	$ 1,566.00	
COST:	**Per annum**	**Per ha**
Labor	$ -	$ -
Ownership cost	$ 508.40	$ 2.03
Maintenance & repair cost	$ 379.50	$ 1.52
Fuel cost	$ 436.95	$ 1.75
TOTAL COST	**$ 1,324.85**	**$ 5.30**

According to Table 9.6, the total cost per hectare for operating a 3.4 m chisel plow is $5.30. This is the cost of the implement only. The tractor cost will be added later.

Implement details

The details are used to calculate the working tempo and capacity of the implement. This is then used to convert hourly cost of the required tractor to cost per hectare.

Labor

There is no additional labor, apart from the tractor operator, applicable to this particular implement. If there is, as for example in the case of a planter, the annual cost of the labor should be added here.

Ownership costs

The calculation of ownership cost is shown in Table 9.7.

TABLE 9.7: CALCULATION OF OWNERSHIP COST FOR A 3.4 M CHISEL PLOW

OWNERSHIP COST	Per annum	Per ha
- Depreciation	$ 433.40	$ 1.73
- License	$ -	-
- Insurance	$ -	-
- Financing cost	$ 75.00	$ 0.30
TOTAL	**$ 508.40**	**$ 2.03**

The total ownership cost is calculated as $2.03 per hour in Table 9.7.

Notes:

- Depreciation = $\frac{\text{Purchase price - Remaining value}}{\text{Economic life}}$

- Purchase price = List price - Discount

- Remaining value = Current list price x inflation factor for Year 10 x Calculated Cross & Perry factor
  (*In this case the Cross & Perry factor, as described in Chapter 8, is 20.35%)*

- There is no license fee applicable in this case.

- There is no insurance applicable

- Financing cost = Rate x $\frac{\text{(Purchase price + Remaining value)}}{2}$

Maintenance and repairs

The calculation of total repair cost is shown in Table 9.8.

TABLE 9.8: CALCULATION OF MAINTENANCE & REPAIR COST FOR A 3.4 M CHISEL PLOW

REPAIR & MAINTENANCE	Inflation factor	Projected List price	Repair Factor	Cost over life time
- Year 1	1.00	$6,555.00	0.0315	$206.48
- Year 2	1.03	$6,751.65	0.0408	$275.47
- Year 3	1.06	$6,954.20	0.0452	$314.33
- Year 4	1.09	$7,162.83	0.0485	$347.40
- Year 5	1.13	$7,377.71	0.051	$376.26
- Year 6	1.16	$7,599.04	0.053	$402.75
- Year 7	1.19	$7,827.01	0.0549	$429.70
- Year 8	1.23	$8,061.82	0.0565	$455.49
- Year 9	1.27	$8,303.68	0.0579	$480.78
- Year 10	1.30	$8,552.79	0.0592	$506.33
TOTAL				**$3,794.99**

** The repair factor refers to the relationship of cost and usage discussed in Chapter 7 and is shown in Table 7.4 in that chapter.*

The cost of total maintenance and repairs is calculated as $3,794.99 in Table 9.8 over the projected ten-year life of the implement and therefore equals $379.50 per annum. This includes maintenance. When divided by the annual working capacity of 250 hectares of the implement, it works out to be $1.52 per hectare.

Fuel usage and cost

Although it is possible to work out the fuel requirements quite accurately on the farm, the following guidelines can be used if specific fuel usage is not available[*]:

- 0.30 liters per kW-hour at 60% draft for high draft requirements
- 0.35 liters per kW-hour at 45% draft for medium draft requirements
- 0.40 liters per kW-hour at 35% draft for low draft requirements

In the case of the chisel plow, regarded as a medium draft operation, the fuel usage can be calculated as:

$$(0.35 \times 0.45 \times 84\ (kW))/2\ (ha) = 6.62\ l/ha$$

[*] *ARC Institute for Agricultural Engineering, Silverton, South Africa.*

The total annual cost of fuel will then be:

$$6.62\ l \times 250\ ha \times \exists 0.26/l = \$436.95$$

The fuel cost per hectare for the John Deere 7510 tractor with the 3.4 m chisel plow will then be $1.75.

9.1.5. COMBINE COST

The cost of a combine can be calculated in the same way as the implement, except for the fact that it is not necessary to add the tractor cost. The combine is driven by itself. The spreading of the repair cost is available from Table 7.4 in Chapter 7 while the Cross & Perry factors to calculate the remaining value is available in Table 8.3 in Chapter 8.

9.1.6. OPERATION COST

In the previous two sections, the cost of a specific tractor was calculated as $14.57 per hour. The cost of the implement was calculated as $5.30 per hectare. It was also established that the working tempo for the specific chisel plow is 2 hectares per hour. The hourly tractor cost divided by the 2 hectares will then be $7.29 per hectare. The total machinery cost per hectare for a John Deere 7510 tractor operating with a 3.4 m chisel plow will then be $12.58.

In these examples, the machinery cost (tractor and implement cost) was calculated for USA circumstances and in the USA currency. The same method can be used to calculate the machinery cost for any country and in any currency for any kind of operation.

9.2. CROP COST

Once the cost of every implement with the appropriate tractor is calculated, the total machinery cost for a specific crop can be calculated. Furthermore, any particular cost (repair, fuel or depreciation) can be calculated for the crop. As fuel cost is currently a major concern for farmers, the method of determining fuel cost will be discussed separately.

9.2.1. TOTAL COST

As an example, the total machinery cost of two different methods of cultivating corn under South African circumstances is shown in Table 9.9.

TABLE 9.9: TOTAL MACHINERY COST FOR CORN

Operation	Traditional	Alternative
	R/ha	R/ha
Plow	153.22	-
Deep rip	-	166.35
Disc	175.16	175.16
Chisel	-	103.75
Chisel	-	103.75
Plant	274.29	274.29
Spray	61.06	61.06
Spray	61.06	61.06
Cultivate	81.28	81.28
Fertilize	161.39	161.39
TOTAL (Rand/ha)	**R 967.46**	**R1188.09**

The total machinery cost for corn, cultivated in the traditional way of plowing and planting, is calculated as R967.46 per hectare. The alternative of rip and chisel plowing is calculated as R1188.09 per hectare. The total machinery cost of all the other crops in the farm business can be calculated in the same way.

9.2.2. FUEL

As mentioned, any particular cost can be calculated for the different operations of a crop. In Table 9.10, the fuel usage and total cost there of for diesel fuel, is calculated for two types of cultivation.

TABLE 9.10: TOTAL FUEL USAGE AND COST FOR CORN

Operation	Traditional	Alternative
	L/ha	L/ha
Plow	15.3	-
Deep rip	-	18.4
Disc	8.2	8.2
Chisel	-	7.6
Chisel	-	7.6
Plant	4.7	4.7
Spray	2.5	2.5
Spray	2.5	2.5
Cultivate	5.4	5.4
Fertilize	5.5	5.5
TOTAL (Liter/ha)	**44.1**	**62.5**
TOTAL (Rand/ha) @ R3.50/l	**R 154.51**	**R 218.65**

According to Table 9.10, the traditional method of cultivating corn uses 44.1 liters of diesel fuel per hectare and will cost R154.51 per hectare at R3.50 per liter. The alternative method uses 62.5 liters of diesel fuel that will cost R218.65 per hectare. The fuel usage and cost of all the other crops in the farm business can be calculated in the same way. It can also be done for different kinds of fuel.

9.3. COST OF STORAGE

The primary reason to store machinery inside is to protect it from weather. Sunlight and moisture have adverse effects on belts, bearings, tires, paint, seats, wood and, to a lesser extent, many other components. Machinery that has been stored properly usually has a higher resale or trade-in value, lower repair cost and less downtime.

It is not always possible to calculate the cost of storage as it may be included in the original purchase price of the farm or it may be part of a capital investment project. In most cases however, it has an indirect influence on machinery cost, as the economic benefits from storing machinery are much greater than the cost of the storage.

The goal must still be to use storage in an economical way because there is a cost involved. Therefore, aspects like space requirements and the storage area must be taken into consideration when planning the machinery storage.

9.3.1. SPACE REQUIREMENTS

When planning machinery storage, the farmer must take into account what happened in the farm business over the last five to seven years, and project ahead a minimum of three to five years. He must decide:

- Which existing storage facilities are to be retained, abandoned or converted to other uses;
- What equipment would be placed in the storage facilities;
- On the new facility's size.

A survey of 300 Midwest farmers in the USA suggested that the minimum shop size is related to the size of the farm. The floor space required for each particular item to be stored depends on a number of factors, including;

- Storing self-propelled equipment (combines, pickers, forage harvester) with or without headers attached;
- The base width and fold-up technique that affects not only transport width, but also door size and storage space;
- The same size machine from different manufacturers or earlier models that may have different floor space requirements depending on the method and fold-up techniques.

9.3.2. STORAGE AREA

To determine minimum total storage area, the farmer can work with the specific equipment to be housed, both current and future. He should use actual dimensions for current equipment. One method of calculating minimum storage area is to:

- Calculate the area for each item to be stored by multiplying the overall length times overall width;
- Sum the areas of all the items;
- Add 15% to this total to allow for space between equipment.

Another method is to:

- Multiply the width plus 1 foot times length plus 1 foot for each machine (to account for space between);
- Sum the areas of all the items.

Both techniques produce the same result: the absolute minimum floor space required for tight, efficient, long-term machinery storage.

This minimum requirement for floor space is merely a starting point for sizing the building. It may account for future storage needs but does not allow for overnight or short-term storage of equipment during various work periods when it would be desirable to leave tractors and implements hitched. During such times, these units may have to be left outside or stored elsewhere – unless planned for in the original design.

9.4. MACHINERY RECORDS

Machinery records are just as important as financial records for good farm management. These records need not be complex or time consuming, but must be up-to-date and contain all necessary information. The recording system may use machine logbooks, a card file or a computer file, depending upon the personal preference of the farmer and the size of the farm business.

9.4.1. WHY HAVE RECORDS?

The benefits of maintenance records are that they can be used to detect excessive oil or fuel consumption and unusual repair patterns, calculate production costs

and assist in planning preventative maintenance programs and machinery replacements. When carefully recording all details of fuel and oil used, increases in consumption can be noticed immediately. The cause can then be investigated and rectified before large amounts are wasted or a more serious breakdown occurs.

Any breakdowns that occur with excessive frequency require investigation. Sometimes, without records, regular breakdowns go unnoticed but with records to his assistance, the farmer can detect and remedy faults earlier. Records also allow planning for maintenance and early ordering of spares. This prevents breakdowns during the working season. Items such as bearings, belts and injectors can be replaced or repaired during the off-season.

Machinery records can make it easier to do farm business budgeting. They can be used to determine machinery inputs to production cost, allows the farmer to reorganize maintenance programs and help the farmer to plan for machinery replacement.

9.4.2. WHAT TO RECORD

Whatever recording system is used, it is important that all the necessary information is kept.

Machine record

Each machine must have a machine record made out at the time of purchase, as shown in Table 9.11.

TABLE 9.11: MACHINE RECORD

MACHINE MAKE/MODEL:	GRAIN GRABBER LT46 COMBINE		
PURCHASE DATE:	1/8/02	**PURCHASE PRICE:**	$85,000
ENGINE NUMBER:	GG 316-840	**FRAME NUMBER:**	GG 316-8
TIRES: **FRONT**	**REAR**	**AIR FILTER NUMBER:**	AL78870
SIZE: 28l X 26rl	12.5L X 16L.1	**BATTERY:**	2 X 12V 3CH-90AMP
PRESSURE: 22 PSI	40 PSI		343mm X 173 mm X 235 mm
OILS:	**TYPE:**	**QUANTITY:**	**FILTER NUMBER:**
ENGINE:	SAE 10W40	11 L	FE 4680
TRANSMISSION:	303 GEAR OIL	10 L	FT 136
HYDRAULICS:	SE-CL SAE 10W HYDRAULIC OIL	19 L	FH 39
FUEL:	DIESEL	303 L	FF 306
WOBBLE BOX:	SAE 90	0.6 L	-

The machine record, as shown in Table 9.11, must contain details of the make and model, purchase date, engine number, frame number, tire size and pressures, type and quantity of all oils and part numbers of fast moving parts such as filters and fan belts.

Service record

Whenever the machinery is serviced the service record must be used to record the service details, as shown in Table 9.12.

TABLE 9.12: SERVICE RECORD

Date	Actual hours	Type of service	Item	Quantity	Cost
05/02/1997	146	A	Engine oil	11L	8.60
			Eng. Filter	1	15.00
13/12/1997	440	B	Engine oil	11L	8.60
			Trans. oil	10L	12.80
			Hyd. oil	19L	23.00
			Eng. Filter	1	15.00
			Trans. Filter	1	12.50
			Hyd. Filter	1	14.00

The service record, as shown in Table 9.12, must be used to record the date of the service, hour meter or mileage reading, type of service, type and quantity of oils, filters or other items used and the cost of every item.

Repairs record

Machinery repairs must be recorded in the same way, as shown in Table 9.13.

TABLE 9.13: REPAIRS RECORD

Date	Actual hours	Type of repair	Item	Quantity	Labor	Down-time	Cost
25/07/1997	261	Replace R/H final drive seal	RS610	1	3 hrs	6 hrs	58.00

All repairs must be entered at the time when the repairs are carried out.

Fuel record

The fuel usage and cost should also be recorded, as shown in Table 9.14.

TABLE 9.14: FUEL RECORD

Date	Actual hours	Quantity	Cost
25/07/1997	26	300 L	78.00
18/08/1997	53	314 L	81.64
23/09/1997	78	283 L	73.58

The fuel record, as shown in Table 9.14, should reflect the date when the machinery was filled, the actual hours of the machine, the quantity of fuel taken and the cost of the fuel.

9.4.3. HOW TO RECORD

Many machinery records are successfully kept in school exercise books but it may be more efficient to keep it in a card file system. The introduction of the computer into farm offices has however led to the use of spreadsheet or management programs for record keeping.

Whatever system is used, success or failure depends upon the reliability of the records. Accurate records are a useful tool for the farmer but are useless if it is not kept up-to-date.

In the examples, some sample records for a card file system were shown. The design may easily be adapted to suit different needs. The important point is that any relevant information about a machine is recorded.

9.5. CONCLUSION

After understanding all the different components of machinery cost, farmers must know how to calculate it in order to approach machinery management in an economical way. This calculations must take into consideration the interest rates, the inflation rate, discount rates, working hours, fuel price, etc as the circumstances under which a farmer operates can differ from country to country and from farm to farm. These assumptions will influence the outcome of machinery cost calculations.

Calculating machinery cost starts by determine tractor cost. It is assumed that by this time the farmer had already matched the appropriate tractor with the implement. The cost of labor, ownership, maintenance and repairs can be calculated separately for a tractor and will result in the hourly cost for operating a tractor for a given amount of annual hours.

Once the tractor cost is calculated, the cost of the implement can be calculated per hectare and fuel cost can be added to the cost of labor, ownership, maintenance and repairs. As the working rate (hectares per hour) will then be known, the hourly tractor cost can be converted to cost per hectare. The sum of the implement cost per hectare and the tractor cost per hectare gives the total cost per hectare of the operation.

After calculating the cost for every operation that is involved in cultivating a specific crop, the total machinery cost for the crop can be calculated. The cost of any component, like fuel cost, can then be calculated separately to assist the farmer in making machinery management decisions in an economical way.

It is not always possible to calculate the direct cost of storing the machinery. It does however have an indirect influence on machinery cost as protecting the machinery means a higher resale or trade-in value, lower repair cost and less

downtime.

Keeping record of machinery costs is just as important as financial record keeping for good farm management. The recording system must be designed to suit the different needs of the individual farmer. The important point is that any relevant information about a machine is recorded and that it must be accurate and up-to-date.

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