

Smart Farming

A Guide to Help Improve Farm Returns
with Better Resource Management

Machinery running costs need to be managed carefully. Here are some tips that can help cut down on machinery costs.



Know your diesel fuel use

Operation	Average Fuel Use (litres/ha) ^{1&2}
Ploughing	21
Heavy cultivation	13
Rotary cultivation	13
Fodder harvesting	12
Combine harvesting	11
Rotary mower	5
Grain drilling	4
Rolling	4
Fertiliser spreading	3
Spraying	1

Manage diesel fuel use

€ Remove unneeded tractor weights. It will save you at least 1 litre of diesel per hour of tractor use ³

Action	Result
Keep records of your fuel use/invoices	If you measure it, you can improve on it
Turn the engine off; don't just let it idle	Idling accounts for 6% of fuel use, the equivalent of about €186/year! ⁴
Shift up a gear and throttle back - when doing lighter field jobs or on road travel	Higher speed, lower engine revs, lower emissions and better fuel economy
Consider using a quad when checking livestock	Reduced fuel use
When renting land – consider the fuel costs of getting to and from the land	Travel to distant land blocks can cost from €22 to €150/ha in machinery costs ⁵

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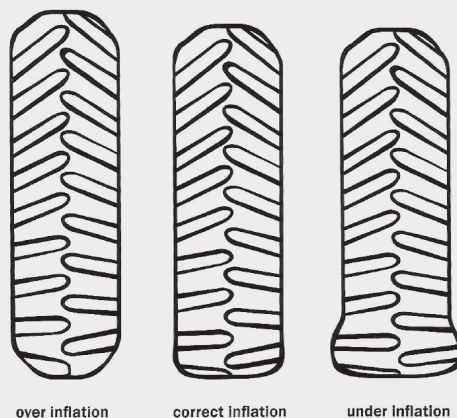
Check tyre pressure regularly

€ 20% fuel savings can be made if lower tyre pressures are used for field work ⁶

During times of heavy machine usage, check tyre pressure once a week.

When using duals, make sure that they are accurately matched with the same tyre size.

Know the correct tyre inflation pressure by seeing how many lugs of the rear tractor tyre are in contact with the ground; there should be at least 3 but not more than 4 lugs touching the ground.



over inflation

correct inflation

under inflation

8 Machinery

Service machines at regular intervals⁷:

Tractor checklist

Task	Daily check	Weekly check	Other
Dipstick gearbox oil level		x	
Dipstick engine oil level		x	
Change the engine oil and oil filters			After 400 hours
Change the gearbox oil			After 800 hours
Ensure the handbrake is working properly	x		
Check wheel nuts/bearings		x	
Check/adjust tyre pressures		x	
Ensure pto U-guard is intact	x		
Replace fuel filters			After 400 hours
Clean mirrors and cab glass	x		



Dirty diesel filters should be replaced after 400 hours to keep your tractor working efficiently and prevent costly injector trouble

Slurry tanker checklist

Task	Daily check	Weekly check	Other
Check oil level in the gearbox	x		
Check the vacuum pump oil level		x	
Check the oil dropper (should drop oil into pump vanes at rate of 1 drop/second)	x		
Change the gearbox oil			After 300 hours
Ensure the handbrake is working properly		x	
Check wheel nuts/bearings	x		
Check pressure guage and replace if not working	x		
Ensure pto guard is intact and fastened at both ends	x		
Wash and clean the inside of your tank			Yearly
Check the rear gate valves for leakage and/or blockages	x		



Carry out a daily check to ensure the PTO guard is intact and fastened at both ends. To help make your farm a safer place, replace worn shaft covers immediately

Fertilizer spreader check list

Component	Daily check	Weekly check	Other
Calibrate your spreader using a tray test at least once every two seasons			Every 2 seasons
Tighten the lift arm stabilisers to prevent rocking and minimise bias		x	
Ensure the top link is set so the discs are slightly higher at rear than front	x		
Maintain the same forward speed once you start spreading, eg 10kph	x		
Always cover the spreader hopper to keep fertiliser dry and spreadable	x		
Check to see that the agitator is running freely	x		
Check the spreading vanes for wear, pitting and indentations			Monthly
Replace spreading vanes (typically costs €350 for a 12m machine)			After 3 seasons



Check the spreading vanes for wear, pitting and indentations each month. Replace the vanes once every three seasons

Protect your equipment against machinery theft



€3million worth of equipment is stolen from Irish farms each year, and over 100 tractors



A tractor equipped with a tracking system is four times less likely to be stolen and six times more likely to be recovered if taken

Tracking device can be retrofitted for under €300

Footnotes

1. Brian Witney. 1988. Choosing and using farm machines. Longman Scientific and technical. Essex. UK.
2. EU Efficient 20 Project: Efficient 20 <http://efficient20.eu>
3. Based on 1,000kg rear tractor weight
4. Based on research carried out by John Deere, Mannheim, Germany
5. Dermot Forristal. 2012. Fuel efficiency 10 ways to save on fuel. Teagasc Today's Farm. Volume 23, No.5.
6. 12 psi for rear wheels; 14psi for front
7. Always follow the guidance in the machinery manual