

LAND LEVELING AND EQUIPMENTS USED FOR LAND LEVELING

with the most common land
leveling equipment is the
water level. It is used for
leveling the ground surface
to a desired elevation.

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LAND LEVELING

- Land leveling is a process to level the field to its best condition with minimal earth movement and then vary the water supply for the field condition.

Land levelling is levelling the field with in certain degree of desired slope using the equipments in the field

12/11/2014

INTRODUCTION

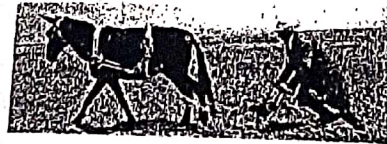
- ▶ Uneven soil surface has a major impact on the germination, stand, and yield of crops due to inhomogeneous water distribution and soil moisture. Therefore, land leveling is a precursor to good agronomic, soil, and crop management practices.
- ▶ Leveling results in more efficient irrigation and, if fertigation and chemigation are applied, in more efficient use of fertilizers and pesticides.

EQUIPMENTS

- ▶ Draft animal
- ▶ When moving soil from high to low areas, weight will need to be added to the leveling harrow/board.
- ▶ Standing on the harrow drawbar should provide sufficient weight (a ratio of 40kg weight/meter width of leveling board gives the best results).

› Leveling with an animal requires total water coverage of the field and takes twelve days to level one hectare.

› To get the best results, the procedure should be repeated the next year (the time required will be much less and can be done at the normal plowing time).

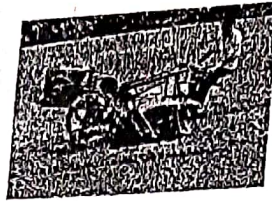


‣ 2-wheel tractor

- When moving soil from high to low areas, weight will need to be added to the leveling harrow/board.
- You can either lean on the handles or stand on the harrow to provide sufficient weight.

‣ Position the tractor at the high part of the field, lean on the handles to add weight to the harrows and drag soil to the lower part of the field. Take the weight off the harrows and return to the higher parts of the field.

‣ It will take at least 7-8 days to semi-level one hectare in the first year (repeat in the second year but less time is required).



- ▶ 4 wheel tractor
- ▶ Level with a rotavator blade in wet conditions or a drag bucket in dry conditions (both can be fitted with laser level attachment). Start at the highest point and drag soil to the lowest areas.
- ▶ It is best to add small wings to the end of the rotavator to improve the movement of soil. Weight may also need to be added to the blade to improve the cutting ability.

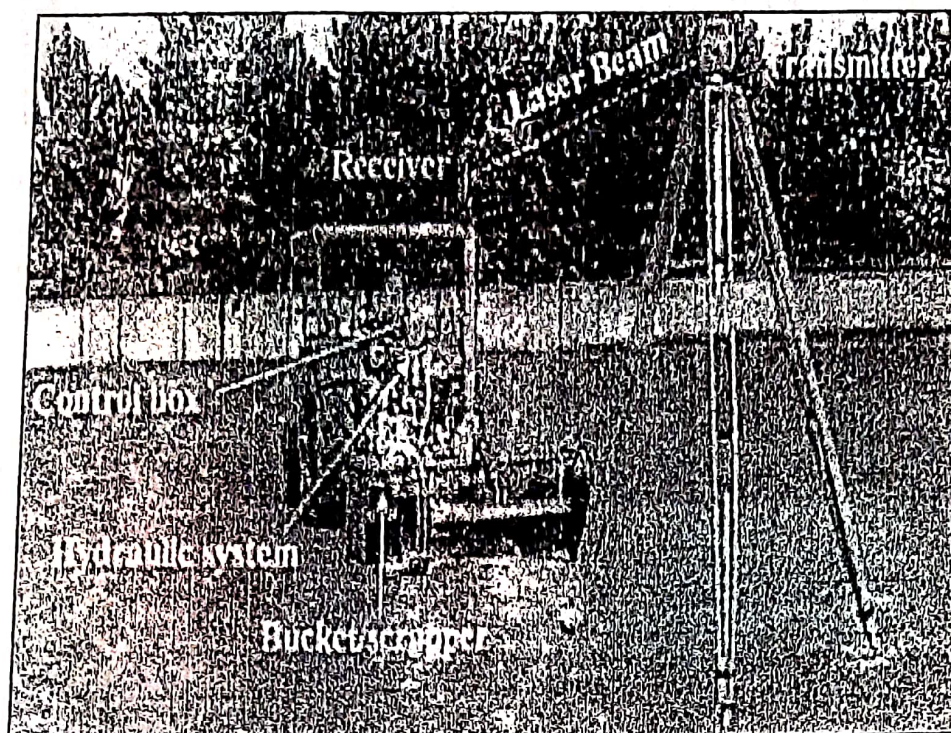
- › When returning to the high places, lift the cutting blade above the ground level.
- › In wet areas where there is poor traction or a chance of bogging the tractor it may be better to push the soil rather than drag the soil.
- › It will take one day to level one hectare in the first year using a rotavator and half a day per hectare using a drag bucket.



- Laser land leveler
- Laser land Leveler is used for leveling of sloped or irregular land areas, with a high precision.

- (i) Drag Scraper/bucket:
- (ii) Laser transmitter:
- (iii) Laser receiver:
- (iv) Control box:
- (v) Hydraulic system:

- The laser device is imported with proper instruction manuals, and has a guarantee of one year from the date of purchase.
- This machine ensures leveling of field on necessary level. Leveling of agricultural fields plays an important role in growing of plants.



ADVANTAGES

- ▶ Improved crop establishment.
- ▶ Even water coverage of the field.
- ▶ Even crop stand and maturation.
- ▶ Reduction of weeds by up to 40 % (thereby a 75 % decrease of labour required for weeding).

→ optimize water use efficiency
→ Reduce Irrigation time
→ Saves ²⁵30% water

→ Improves uniformity of crop maturity

- Increase of farming area by 5-7 %.
- Reduction of farm operation times by 10-15 %.
- Within rice production, the possibility of changing from planting and transplanting to direct seeding which results in reduced labour of 30 person-days per ha.
- Average yield increase of 10-20 %.

- Land leveling improves water management which improves
- Weed suppression
- Control crop establishment
- Weed control
- Nutrient use efficiency
- Crop uniformity.

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