

## Tandem, offset and compact disc harrows:



Top: Offset disc harrows, trailed with in-frame carrier axle (Image: Gessner Pty Ltd) ; Bottom: compact disc harrows in operation (Image: K-Line Agriculture)

### Key points:

- Soil mixing by discing involves gangs of concave discs designed to loosen and throw soil laterally to achieve some amount of incorporation and mixing with partial inversion.
- Depth capacity is typically in 15-20cm range but can reach up to 25-28cm on heavy duty large disc harrows. The depth capacity is driven by the implement self-weight and adjustable disc cutting angle (greater angle = deeper depth), and actual depth is regulated by the gauging wheel axle.
- Compact high speed disc tillers use individually suspended discs operating shallower in the 8-15cm range, with depth regulated by an adjustable rear gauging roller.
- Work rate of 5m wide disc harrows operating at 10 km/h can reach 4 ha/hr at an approximate cost per pass of \$70-80/ha.
- Greater concavity disc blades improve incorporation while discing depth should be kept at a maximum 25% of disc diameter. Notched blades improve disc drive in soft sandy soils.
- Surface material incorporation is typically limited to the upper half of working depth. High speed and multiple passes are necessary to improve soil/amendment mixing uniformity and incorporation depth.
- The power requirement of discing operations is strongly affected by operating speed.
- These implements can be used for the shallow incorporation of lime to treat acidity.