

With more than 20 staff across three locations, Soilworks Australia is headed by founder Randal Tomich who has over 20 years experience in agriculture and horticulture.

The Company was formed following extensive research and trial which found that traditional ripping practices produced low soil breakout volume, soil erosion and rip-line subsidence. Traditional mounding techniques lacked precision and produced inconsistencies in soil volume within rows.

As a result, the patented Soilworks Establishment System was developed in conjunction with soil scientists, design consultants and mechanical engineers and is endorsed by the Commonwealth Scientific and Investigative Research Office (CSIRO) of Australia. Using precision farming techniques, the technology has applications across both green field and established sites with all work guaranteed to specification.

With demonstrated results and a dedicated team, Soilworks Australia offers a range of solutions to maximise yield potential.

WHY RIP?

The most common cause of soil-induced vine or tree performance issues is from the issue of sub soil compaction not being addressed during the establishment phase. It is widely recognised that plants have a finite ability to penetrate hard soils and in cases of severe soil problems, may suffer from premature leaf senescence or poor canopy development.

Deep tillage (or ripping) during the establishment phase enables plant roots to explore greater soil volume and allow water penetration into the soil profile, therefore increasing water availability. As a result, root aeration and drainage is improved and roots gain access to previously untapped reserves of soil nutrients increasing the crop or yield potential.

WHY MOUND?

In shallow soil profiles, duplex soils or poor sub-soils, it can be difficult to achieve adequate soil depths to maximise yield potential. In soils that are low in organic matter, mounding under the row concentrates organic matter in the root and irrigation zone improving soil porosity and crop growth. With effective mounding, soil profiles and volumes can be greatly increased, enabling shallow soils to be utilised thus increasing the overall plantable area.

TRANSLATING SOIL MAPS

The purpose of soil surveys is to identify soil types, potential problems and amelioration requirements to improve uniformity of soils within blocks for the even ripening of fruit. Improved ripping and mounding techniques can impact on soil profiles, leading to improved uniformity within a block.

The use of soil mapping for precision farming requires accurate translation to the paddock to be effective. Soilworks Australia has software that enables soil maps to be downloaded to a computer in the tractor and ripping depths to be adjusted to soil map specification in real time. This facilitates amelioration of soils to specification, increasing soil uniformity within blocks resulting in uniform fruit ripening.

SOIL SCIENCE:

We recognise the assistance provided to us over the years by Soil Scientists such as Alf Cass, PhD, John Rasic and Kym Luitjes. Their contribution has proved valuable in developing and continuously improving the best techniques in permanent crop establishment.

PROVEN INDEPENDENT RESULTS:

Grape & Wine Research Development Corporation Study

A recent study funded by the GWRDC found a 35% saving in irrigation in commercial vineyards developed using Soilworks establishment techniques.

2002 Commonwealth Research & Scientific Investigation Australia Study

“Ameliorating soil constraints to improve performance of established vineyards. The use of the mid row Vibrosoiler led to a 14% increase in yields in medium textured soils that were suffering compaction problems and a 7% increase in yield on light-textured soils.”

Dr Dean Lanyon
RESEARCH SCIENTIST CSIRO

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NEW DEVELOPMENTS

VIBROSOILER RIPPER

The Soilworks Australia patented "Vibrosoiler" is a 1.2 metre deep parabolic curve ripper with a 500mm wide winged keel that vibrates at a speed up to twice per second. The unit creates three to four times the worked soil volume than that of a standard ripper and can incorporate organic matter and topsoil through the profile as required.

Pulling a bow-wave of up to three metres, the unique system removes any compaction or pans and has proven to be more effective than traditional cross-ripping at two metre centres.

When set to mixing, the Vibrosoiler can blend soil profiles by delving up sub-soils and replacing it with topsoil - permanently altering the soil profile and allowing easy penetration of roots to moisture and nutrients below. These deeper soil profiles offer greater water holding capacity.

SOILWORKS MOUNDER

The patented Soilworks Moulder is fitted behind a bulldozer and incorporates an offset disc, grader blades and fertiliser spreader in a single-pass machine. The grader blades can be adjusted to produce only a planting bed, retain pastures in the mid row or remove up to 150mm of top soil from the mid row for mounding.

FORESTRY MOUNDER

Soilworks uses a six-disc Savannah moulder with roller fitted with 36 inch discs for large volume mounds, improving soil depth and resulting in more uniform forest growth.

CAT CHALLENGER

Out working a D9 bulldozer, the Cat Challenger is a 450 horsepower rubber-tracked bulldozer with low ground compaction. At a compaction of 6.9psi compared to 24psi on a traditional D8, the Cat Challenger imparts compaction equivalent to a traditional vineyard tractor.

PARABOLIC CURVE RIPPER

With a lower angle of entry and minimal compaction than traditional rippers, the parabolic curve ripper produces smaller breakout sizes and reduced air cavities - ripping to a depth of 1200mm. It can also be fitted with wings for increased lateral breakout.

MULTIPLE SHALLOW PARABOLIC CURVE RIPPERS

Designed for minimal compaction, the multiple shallow parabolic curve rippers are capable of ripping up to 700mm deep at tine spacings between 400mm and 1000mm. Three to five individual rippers can be fitted with wings at variable angles to specification. An offset disc can also be fitted and used in conjunction with the ripping tines.

GLOBAL POSITIONING SYSTEM (GPS)

Utilising Real Time Kinetic (RTK) technology, the use of GPS enables tractors to be guided accurately - within 2cm of specification. Furthermore, it enables surveying and soil maps to be created and translated, enabling ripping techniques to be tailored to each soil type producing more uniform ripening within a row.

ESTABLISHED SITES

DOUBLE-TINE VIBROSOILER FOR MID-ROW RIPPING

The patented Vibrosoiler is fitted with front coulters, crumble rollers, harrows and fertilising box enabling complete ripping in one single pass. The Mid-row Vibrosoiler is a twin (600mm) vibrating ripper with twin vibrating wings and is adjustable to row widths from 1.2 to 6 metres.

SUB-SURFACE IRRIGATION INSTALLATION

An attachment to the double-tine Vibrosoiler, this unit enables drip-line to be laid at depths up to 500mm and within 250mm of the planting row.

MID-ROW VINEYARD MOUNDER

Consisting of three sets of grader blades, the mid-row moulder is capable of building 'v' shaped mounds up to 300mm high leaving a flat or 'v' floor.

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ONE PASS RIPPING AND MOUNDING

The patented Soilworks Establishment System enables GPS-guided ripping, discing fertilising and grading or mounding, in a single pass. Combined with prior soil preparation, a planting bed is ready... a ready to plant bed is achieved.

Applications

- Vineyards beds and mounds up to 300mm by 750mm
- Orchard beds (citrus, stonefruit, apple) and mounds up to 450mm by 2.4m

LARGE MOUND BUILDING

The Soilworks large mounding system offers great flexibility in mound shapes and produces uniform volume mounds at high alignment and precision. Mounding is completed in either a 2 or 3 passes and designed for row widths of 5m to 10m. The first pass pulls over the planting line forming the centre of the mound and can be done in conjunction with the ripping pass. The second and third (optional) passes scalp topsoil from the midrow, form the sides and shape the mound. On the last pass we seed a cover crop and incorporate into the mounds. Approximately 150mm of topsoil is required to build mounds up to 4m wide by 400mm high. The three-pass system is recommended in areas prone to rippline subsidence. Good soil preparation is required with cultivation 150mm deep in row alignment.

Applications

- Mounds up to 5m wide by 500mm high with a "V" of flat floor
- Nut trees – Almond, Walnut, Pistachio, Macadamia crops
- Specialist forestry trees

DELVING ESTABLISHMENT TECHNIQUE TWO PASS RIPPING SYSTEM

Excellent results have been achieved in shallow topsoils using the 2 pass delving technique. The first pass delves a trench to 450mm deep delving out the subsoil. Organic matter (cow manure) and fertiliser is then added.

The second pass performs the deep ripping and mounding ready to plant. Using the Vibrosoiler we can successfully incorporate and blend organics down to 700mm.

SURVEYING AND PEGGING

Offering a surveying service that includes topographical mapping and pegging, Soilworks Australia operators can work in conjunction with nominated surveyors, with row alignment guaranteed.

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