

New plant tills soil and saves moisture

One of the great benefits of the no-till farming system is the amount of soil moisture which is conserved due to the lack of soil disturbance and the retention of residues on the surface.

But in some cases soil disturbance also has its merits, particularly in hard pan or clay soils which pack down over time, or on wheel tracks in paddocks.

A different brassica could enable no-till farmers to have their cake and eat it too, by providing some of the soil disturbance benefits of tillage while retaining all the moisture conservation advantages of no-till farming.

In a GRDC-supported trial at the WA No-Till Farmers Association demonstration site near Meckering, University of WA researcher Dr Ken Flower is looking at the possible benefits of daikon radish, a crop showing some promise with no-till farmers in the US – popularly known as the ‘tillage radish’.

“The key difference with this plant is that it grows a thick tap root – bigger than a carrot,” Ken said.

“The idea is that it loosens the soil, providing improved moisture penetration in following years, while the root itself breaks down quickly and adds to soil organic matter.”

The plant does not provide a cash crop, but may generate significant biomass which could be used as feed, or be knife rolled to create an ideal moisture-conserving cover



Dr Ken Flower in a trial crop of daikon radish.

crop, as an alternative to following.

Ken is comparing the daikon radish to a number of cover crop alternatives, including a daikon/vetch mix as well as Saia oats, vetch on its own and Indian mustard, in rotations with wheat, lupins and canola.

Among other things the trials are assessing the amount of nitrogen mineralised in the soil by each cover crop, to see if producing a cover crop once every five or six years instead of a chemical fallow or even a continuous cash crop rotation provides an economic benefit. ■