LUPIN PRICES HARD TO STOMACH

Almost half a million hectares of WA agricultural land is denied the soil enriching benefits of narrow leaf lupin due to the crop’s poor economic performance.

However, research aimed at increasing narrow leaf lupin oil content and value, could bolster the viability of the crop and, at the same time, help revive tired WA soils.

This could reduce fertiliser input costs and earn $100 per tonne more than current lupin crops, to help keep paddocks profitable while preparing for cereal phases.

WA growers apply an average 31kg/ha of nitrogen fertilisers per year, up to 25 per cent more than in the eastern states, but could instead derive 40kg/ha from these profitable lupin rotations, according to project supervisor, Craig Atkins, a UWA researcher with the Centre for Legumes in Mediterranean Agriculture (CLIMA).

Narrow leaf lupin’s poor amino acid balance and protein degradation when digested has reduced its value in its primary stockfeed market.

However, CLIMA’s research could increase the seed oil content four-fold, making the crop much more attractive to stockfeed, processing and human consumption markets.

“Related commercial lupin species, such as pearl lupin, have up to 18 per cent oil content, so it’s reasonable to expect that we could adjust grain composition in narrow leaf lupin to similar levels,” Professor Atkins predicted.

Previous attempts to introduce traits from related species into narrow leaf lupin, through crossing, have failed due to genetic incompatibilities between species.

Supported by the Grains Research and Development Corporation, the CLIMA project is genetically altering the regulation of partitioning in the developing narrow leaf lupin plants.

During grain filling, carbon and nitrogen are metabolised and partitioned differently within the seed, depending on when and how they arrive.

“It’s how the seeds store those nutrients which determines the final composition of the grain and what proportion can be metabolised by animals,” Professor Atkins said.

“If we can change how the seed stores energy and increase the metabolisable energy available to animals, WA lupin growers would have a more valuable product and could demand a better price.”