

## The critical nature of seeding depth

One of the most underestimated but critical factors in achieving successful establishment in pastures is seed placement and seeding depth. For best chance at establishment from germinated seed, sowing into moisture with good seed to soil contact is essential. Seed will nearly always prefer some soil coverage, and good contact with the soil. Accurate placement from seeding methods such as a disc seed with press wheels will over produce vastly superior establishment rates to other methods such as broadcasting and harrowing.

As a general rule of thumb, the larger the seed size, the greater the seed can be sown at depth. Seed size is a good indication of the energy reserve available in the seed to be able to grow through the soil before emergence, and the amount of time that the seedling can survive for before needing to begin photosynthesis for its own energy production. It is often advantageous for many crops to be sown at depth to 'chase moisture' deeper into the profile. However, with many species with small seeds, sowing too deep will be detrimental to the survival of the seedling. If the seed is sown at too greater depth, then the plant will never make it out of the ground before expending all the energy reserves in its small seed. As an additional factor, the time it takes for the seedling to break ground will also be a cause of pastures getting away slowly, and early in the season can set back a crop from getting established substantially in time, if not also effecting plant density.

Small seeds such as most medics, clovers and lucerne are at their most vulnerable to being sown too deep. In the photographs below we simulated an establishment in heavy brown clay with three different seed types: Tetrone Tetraploid Annual Ryegrass, Subzero Hybrid Forage Brassica and GTL®60 Lucerne. As you can see the lucerne really struggled to emerge at anything but the shallowest sowing depth. The Ryegrass and Brassica did much better, but you can still see the effects, particularly in the brassica, at the rate of establishment decreasing with the increasing depth.

So when it comes to sowing time in 2020, consider your seed type and consider your equipment. A good rule of thumb with these smaller seeds is to proceed on the side of caution, and shallower is probably better in most situations. Conveniently for anyone using S&W Seed Company proprietary varieties, any failed establishment in the first 30 days post sowing will be covered under our Establishment Guarantee™ program, which even applies in situations where seed was simply sown too deep.



GTL®60 Lucerne



Subzero Forage Brassica



Tetrone Tetraploid Annual Ryegrass

### Percentage of Lucerne seeds established compared with different seeding depth and soil types

	Sand	Loam	Clay
1.25cm	71%	59%	53%
2.5cm	73%	55%	48%
3.75cm	55%	31%	28%
5.0cm	40%	16%	13%