

Multi - Species Pasture Cropping – Colin Seis

Since its inception in the mid 1990s by Colin Seis and Daryl Cluff , ‘pasture cropping’ has been practiced with the use of a variety of crops ranging from wheat, barley, oats, cereal rye, lupins, and canola. Summer crops have been sown with millet, cow peas, lab-lab and sorghum. These have usually been sown as a single species into perennial grassland or pasture, not as a mixture of species.

‘Pasture cropping’ with a single crop species into a diverse perennial grass base has achieved great success by improving soil structure, increasing in soil carbon, improving nutrient cycling and more efficient use of water while producing good crops for grain and /or forage. It has also been shown that the technique will increase perennial grass numbers and species diversity.

Research data from the USA has shown multiple species crops are better than monocultures for improving soil carbon, soil biology, and soil structure as well as providing improved forage quality for grazing livestock. Multiple species crops can also be used as a soil biology primer, disease and weed control and carbon building technique. USA research has also shown that by including flowering plants in a crop mix will increase insect diversity which controls insect attack on crops and attracts birds and other animals. This will improve the ecology of the whole farm and move the farm closer to functioning as an ecosystem.

For the last three years Colin Seis has been developing ‘multi species pasture cropping’ with the aim of producing better quality forage and improving soil health even more than single species pasture cropping does. The technique has the added advantage of being able to still harvest a grain crop after the multi species crop is grazed.

‘Multi Species Pasture Cropping’ uses a group of plant species that produce good quality forage, have a range of different root systems, includes, legume species, flowering plants and species that will add to organic matter on the soil surface and in the soil as root mass. The plant mixture also produces a variety of plant root exudates which feed soil micro-organisms which further enhances soil health and soil carbon.

Since developing ‘Multi Species Pasture Cropping’ Colin Seis has achieved the following results when comparing ‘Multi Species Pasture Cropping’ to single species ‘Pasture Cropping’ on his property Winona. Both crops were sown into native grassland.

‘Multi Species Pasture Cropping’ using a mix of oats, forage brassica, annual vetch, and field pea produced:

- Produced better quality stock forage with improved fattening value and superior stock health benefits, than a single species of oats. (*The sheep did not develop scours on a mix of species.*)
- The Multi species grew better and produced more forage than oats on its own in a dry season.
- The soil structure and water infiltration was improved.
- Less weeds. (*This is due to the shading effect and quick canopy closure of the faster growing brassica species*)
- More beneficial insects observed in the crop.
- After grazing the Multi species crop, the oats can be harvested for grain.

The photos below show 'multi species pasture cropping' on 'Winona' in 2014.

The crop is of a mix of oats, forage brassica, vetch, field pea, and clover sown into native grassland of around 40 species.



Multi Species crop pre grazing.

Multi Species crop on 25th June after 2 grazings.

Note: After one more grazing the oats will be allowed to mature, then harvested for grain