

Cover Crops for Weed Suppression in Citrus Row-Middles

Researchers: Ramdas Kanissery, Miurel Brewer, Davie Kadyampakeni, Sarah Strauss

Contact: Ramdas Kanissery
rkanissery@ufl.edu

UF/IFAS SWFREC

Cover crops are generally planted for their soil-improving effects; however, they also provide a natural means for suppressing weeds. We have evaluated the utility of planting cover crops in citrus row middles for their contributions toward weed suppression through some field trials based in southwest Florida. Generally, in our trials, cover cropping substantially impacted weed emergence in citrus row middles. For instance, there was a significant reduction in weed coverage (up to 82%) in cover cropped tree row-middles compared to no cover cropped control/grower standard in one study location. Among the several



Figure: Weed-free row-middle in a cover crop planted citrus grove (left) and weeds growing in the non-cover cropped control row-middles (right).

factors affecting weed suppression by cover crops, the physical barrier provided by the lush growth of cover crops on the soil surface is considered a primary control mechanism. Research from our study has shown a strong negative relationship between the number of cover crop plants and the weed density in the row middles, clearly illustrating the significance of cover crop coverage and biomass in effectively suppressing weeds. Shade is a natural weed killer; hence dense growth of cover crops can provide shade and keep soils cool, preventing the weed seeds from germinating or growing aggressively. Moreover, certain cover crops evaluated in

our trials are known to release biochemical compounds that suppress the germination and growth of weeds in proximity (also known as allelopathy). Such effects are also believed to be beneficial in managing tough weeds in our study. For instance, certain perennial weeds in citrus, such as grasses and sedges that potentially re-grow from rhizomes, or tubers, are relatively difficult to control, even with chemical control. However, the cover crop mixes (e.g., Daikon radish, sunn hemp, etc.) evaluated in our study substantially suppressed the germination and growth of these grasses and sedges.

Funding

