

UF/IFAS Industrial Hemp Pilot Project: **Selecting growing media for hemp**

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There are a lot of substrate options to choose from and certain plants perform better in specific formulations. What is the best substrate for growing hemp in a greenhouse, however? To find out, the UF/IFAS Mid Florida Research and Education Center evaluated several commercial substrates for growing hemp.



Preliminary Findings

Preliminary findings suggest that hemp can be successfully grown in containers and propagated by vegetative cuttings in a wide variety of substrates, including those containing starter fertilizers. Hemp in container production seems to favor substrates with greater porosity (air space) and perform poorly in substrates that stay too wet, as root rot has been observed in other substrates used outside of this assessment.

The substrate with the highest overall biomass (including plant height at harvest and flower yield) was the one with the greatest porosity in the form of perlite, a pumice-like material. We observed visually denser and healthier roots systems in this same substrate.

At this stage we're not sure how water content in the root zone affects the CBD concentration in hemp flowers, but we did see that plants in the best draining substrate produced the highest concentrations of CBD in flowers. There are many environmental and genetic factors that can influence the CBD concentrations of hemp.

Substrate selections and irrigation levels can be adjusted and optimized as they may vary on a cultivar basis.

Rep 1 Rep 2 Rep 3 Rep 4 Rep 5



Red = mix #	Mix 3 - Berger BM 6	Mix 5 - Custom
Mix 1 - Fafard 3b	Mix 4 - Klasmann #4	Coir/Perlite
Mix 2 - Fafard 4 P		Mix 6 - Proxmix HP

This picture of inverted root balls after plants were harvested shows the varying density of roots from six different media selections. Treatment 5, a media with coconut coir, perlite and vermiculite had the best-looking roots among the selections. The same media formulation showed the highest flower yield as well.