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# 101 Ways to Try to Grow Arabidopsis: What Root Media Worked Best to Cleanly Remove Roots?

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## Purdue Methods:



### What root media worked best to cleanly remove roots?

#### Short answer:

Fine-textured calcined clay granules (Profile Greens)

#### Discussion:

Some researchers need to analyze roots, or want roots free of debris prior to transferring into hydroponic systems. We did not examine this aspect formally, but pulled up some plants at the termination of the study to see if some root systems came out cleaner of debris than other. Plants growing in fine-textured calcined clay granules (<0.1 cm diameter) were easier to extract roots from cleanly.

Note that plants growing in this media required fertilizer at each irrigation, rather than every other irrigation. Early in the production cycle, plants in this media were far behind plants in all the soilless mixes. We changed the fertilizer frequency to every irrigation and plants were of similar vigor and size by the end of the study. The larger granules have been used successfully at our facility as well (no data), though the containers needed to be nearly completely submerged when irrigated due to low capillarity. Of course, the cleanest method would be to use hydroponic methods (5,6,12).



**Figure 1. Though not a controlled treatment in our study, this photo provides an example of cleanliness of roots of plants grown in Profile Greens (left) as compared to a soilless mix.**



**Figure 2. Plants grown in Turface MVP. These plants required a deeper sub-irrigation tray to saturate the medium.**



**Figure 3. Representative plants grown from Pro-Mix PGX (left) and Profile Greens. Plants grown in Profile Greens required fertilizer at each irrigation to match the quality of plants grown in Pro-Mix PGX fertilized every other irrigation.**



**Figure 4. Turface MVP and Profile Greens calcined clay granules. These products are manufactured for athletic fields and golf course industry to improve drainage.**