



The Use of Aquatrols AquaGro[®] L with PsiMatric[™] Technology to Alter Water Distribution in Horticultural Substrates (North Carolina State University, Raleigh, NC)

Research Cooperator: Dr. William Fonteno

Objective: To determine the changes in physical and hydraulic properties of a peat-based substrate in response to incorporation of AquaGro L with PsiMatric technology.

Study Details

Location:
Raleigh, NC

Materials:

- Substrate – 60% peat, 20% vermiculite, 20% perlite.
- Containers – Six-inch pots, 48 cell bedding plant flats, 288 cell plug trays.

Treatments:

- AquaGro L at 3, 5, and 7 fl oz/yd³.
- Untreated control substrate.

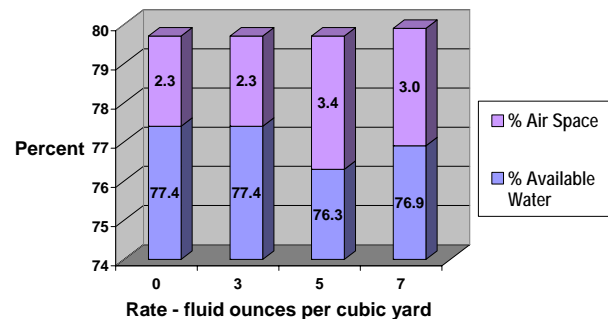
Trial year:

- 1999

Evaluations:

- Total porosity, air-filled porosity, and water retention at container capacity

Effect of AquaGro L with PsiMatric in 288 Plug Trays



Results

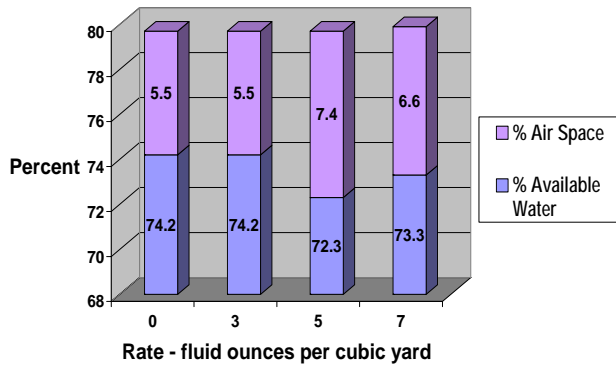
- Regardless of container size, airspace was greater in substrate treated with 5 or 7 fl oz/yd³ of AquaGro L than in the control. The increase was greatest at 5 fl oz/yd³ treatment rate.
- Aquatrols AquaGro L with PsiMatric increased aeration at container capacity by 23, 34, and 48% in six-inch pots, bedding plant cells, and plug cells, respectively, compared to the untreated control.

Conclusion

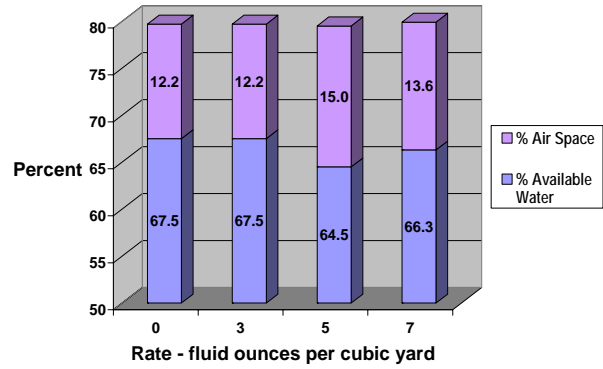
Incorporation of Aquatrols AquaGro L with PsiMatric Technology can increase substrate airspace at container capacity, especially for short containers in which air space is often a limiting factor for plant growth.

(more data on next page)

Effect of AquaGro L with PsiMatrix in 48 cell bedding plant flats



Effect of AquaGro L with PsiMatrix in 6-inch pots



Conclusion

Incorporation of Aquatrols AquaGro L with PsiMatrix Technology can increase substrate airspace at container capacity, especially for short containers in which air space is often a limiting factor for plant growth.