

SPAR :: Pot Cultures

Current capacity is about 2000 pots (Fig. 1). This pot-culture facility adjacent to SPAR units provide an unique opportunity to grow plants in natural environment, but with computer-controlled fertilization and irrigation capabilities to study nutrient (Figure 2), water deficit and other studies. By growing plants in the pot-culture nursery and by transferring the pots at specific growth stages into the SPAR facility will allow us to do certain experiments to answer specific questions which require precise control of the environments. Individual plants can be grown in large, free-draining polyvinyl chloride (PVC) pots (15 cm diameter x 65 cm depth) filled with sand and supplied water and nutrients via plastic pipe and dripper system (Netafim, Fresno CA). The pots are normally in about 8-9-m long racks (or rows) spaced about 1 meter apart and arranged in east-west direction. The row spacing can be adjusted if needed depending on the experiment. All pots are normally irrigated three times per day in sufficient quantities to meet the plant's requirement with excess nutrients allowed to drain. For nutrient deficit studies, the nutrient solution can be varied using large (600 L) mixing tanks and pumping under pressure by chemical metering pumps through plastic lines to specific rows of plants. For water deficit studies, by adjusting the timing, the nutrient solution can be delivered to obtain desired water stress levels.

