Efficient Watering

Coughenour, Connor

The intent of this experiment was to discover which method of irrigating plants grew the plants in the most efficient manner. I tried a new irrigation system that consisted of injecting the water underground using a small piece of pipe. This was compared to two common types of irrigation seen in agriculture today, sprinkler and flood. The procedure I followed was to have three sets of four plants for each type of irrigation, making nine sets of four. Each set of four plants was in its own pot. Pots were placed in a 3 by 3 grid formation. The pots in each row received the same amount of water, and each column contained the same type of irrigation. Plants in the top row received 15 ml of water daily, those in the second row 30 ml, and the bottom row received 45 ml. The far left column was irrigated by the underground system. The middle column was flood irrigated. The column on the right was irrigated by a sprinkler system. I based the efficiency of the irrigation method on the growth of the plant. I did this because in practical applications, the irrigation system that uses the least amount of water to grow healthy plants is ideal. My results showed that underground watering grew the tallest plants for each of the three different amounts of water received. The sprinkler method grew the second tallest plants, with the flood method producing the shortest plants in all amounts of water. The flood method wasted water by letting the mass of water flow directly through the dirt, unlike the other methods, which had a slower application. The sprinkler method wasted water through evaporation because the water is dispersed into a fine mist, which evaporates easily. The underground system does not lose water through runoff or evaporation; therefore it is the most efficient.

Awards Won:

Fourth Award of $500