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Biol120

Dr. Beach

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Question: How well would the Wisconsin fast plants grow while being watered with a solution of 20% Sprite and 80% water for two weeks?

Hypothesis: Within the amount of time for growth, the solution would slow plant growth.

Results

In order to compare the growth of the plants, the root length was measured after two weeks of growth (Figure 1). The average length of the eight tap water plants was 50.4mm, and the standard deviation was 5.2. The average length of the two surviving Sprite plants was significantly less than the tap water at 7.5mm, and the standard deviation was 3.5. The individual lengths of the Sprite plants are also noted. One was found to be 5mm and the other was found to be 10mm.

The stem lengths of the plants were also measured (Figure 2) to show a comparison in growth. The average length of the tap water plants was 98.12mm. The standard deviation for this average was 21.1. The average length of the Sprite plants was nearly a quarter of the tap water average at 26.5mm, and the standard deviation was 7.8. The individual stem lengths of the Sprite plants were noted at 21mm and 32mm.

The number of leaves on each plant (Figure 3) were also measured to compare the growth rate of the plants. The tap water plants had an average of 3.6 leaves with a standard deviation of 0.9. This count did not include the Cotyledons. The Sprite plants had an individual count of 3 and 4 which averaged to 3.5 leaves, but this included the Cotyledons. The standard deviation for this was 0.7.

The length of each leaf was then measured to continue growth comparisons. The averages of the plants were then taken (figure 4). The average of the average length for each of the eight of the tap water plants was 16.9 mm with a standard deviation of 4.2. The average of the average length for both the Sprite plants was 4.2mm with a standard deviation of 0.64. The individual averages for the Sprite plants were 3.75mm and 4.66mm.

**Figure 1. The average root length of plants using tap water compared with average and individual plants using Sprite.** The root lengths of the plants are represented in this data.

**Figure 2. The average stem length of plants using tap water compared with average and individual plants using Sprite.** The stem lengths of the plants are represented in this data.

**Figure 3. The average leaf count of plants using tap water compared to the leaf count of plants using Sprite.** The leaf counts of the plants are represented in this data. It is important to note that the Sprite plants were counted while including Cotyledons. The count of the plants using tap water did not include Cotyledons.

**Figure 4. The average leaf length of plants using tap water compared to the average leaf length of plants using Sprite.** The average leaf lengths of the plants are represented in this data. It is important to note that that the Sprite plants measurements included Cotyledons in the average while the tap water plants did not.