

Grass Growth

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Guiding Question

How do different amounts of organic or chemical fertilizer affect the growth rate of grass over the course of a week?

Prediction

I predict that the grass patches with the organic fertilizer will grow the fastest and produce the healthiest grass. The reason I think that this is true is because organic fertilizer is naturally created and is not obtained from GMOs.

Materials

- 3 teaspoons of Household ammonia
- 32 cups or 2 gallons of water
- 3 tablespoons of epsom salt
- 3 tablespoons baking soda
- 3 ½ Chemical fertilizer
- Small bucket to mix ingredients
- Stick or stirrer to stir
- Gardening gloves
- Watering can to apply fertilizer
- Six patches of grass (about 12 sq. ft.)

Procedure

- Cut the grass so that the length is all even and put on the gloves.
- Mix $\frac{1}{2}$ tsp. ammonia with 1 tsp. baking soda, 1 tbsp. Epsom salt and 12.5 cups of water in a small bucket to create your organic fertilizer.
- Pour 1 cup of the organic fertilizer to the first patch of grass. This will be called Medium Organic.
- Pour 2 cups of the organic fertilizer to the second patch of grass. This patch will be called Large Organic.
- Add 1 cup of chemical fertilizer to the third grass patch. This will be called Medium Chemical.

Procedure Continued

- Add 2 cups of chemical fertilizer to the fourth patch of grass. This patch will be called Large Chemical.
- Add $\frac{1}{2}$ a cup of organic fertilizer mixture and $\frac{1}{2}$ a cup of chemical fertilizer to the fifth patch of grass. This will be called Both Fertilizers.
- Leave one patch of grass without any fertilizer. This is the controlled variable. This patch will be called Regular.
- Let the grass grow, wait for a week. Make sure that all patches are in the same setting.
- Take observations every day.

Pictures of Grass

This is grass patch #1-
Medium Organic



This the grass patch of #2-
Large Organic

This is grass patch #6-
Regular



Pictures of Grass Continued

This is grass patch #3-
Medium Chemical



This is grass patch #4-
Large Chemical

This is grass patch #5-
Both Fertilizers



Data Table

Patch	Height Before	Height After	Rating of healthiness/greeness (1-10)
#1- Medium Organic	5 in	7 in	9
#2- Large Organic	5 in	6 in	6
#3- Medium Chemical	5 in	About 6.75 in	8
#4- Large Chemical	5 in	5 in	2
#5- Both Fertilizers	5 in	About 6.5 in	7
#6- Regular	5 in	About 5.5 in	4

Conclusion

In conclusion, the grass patch with the medium amount of organic, homemade fertilizer had the best results and grew the healthiest plants. My hypothesis was correct. The grass patch that performed the weakest was the one with a lot of chemical fertilizer. The chemical fertilizer was sticking to the bottom of the grass and weeds were growing where the chemical fertilizer was placed. If I had to rank the healthiest patches to the worst patches, I would rank them medium organic, medium chemical, both fertilizers, large organic, regular, large chemical.

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