

Fertilizer “Fertipelo”

Human hair contains nutrients such as nitrogen, calcium and sulfur, which are essential for plant growth.

When hair decomposes, it releases these nutrients into the soil, enriching it, and providing plants with the elements necessary for their healthy development. This hair composting process not only reduces waste, but can also improve soil quality and encourage sustainability in gardening and farming.

Therefore, hair can be a good natural fertilizer and an eco-friendly option to promote plant growth.



Need to develop a liquid fertilizer

The development of liquid fertilizers responds to several needs and advantages:

- Rapid absorption: Liquid fertilizers can be absorbed by plants more quickly than solid fertilizers, since they are in water solution and they can be assimilated more easily by the roots.
- Greater precision in application: Liquid fertilizers allow a more precise and uniform application, which helps avoid over- or under-fertilization of plants.
- Flexibility in dosage: Being liquid, fertilizers can be easily diluted in water in different proportions according to the specific needs of the plants or crops.
- Lower risk of leaching: Liquid fertilizers can be applied in a more precise and controlled manner, reducing the risk of nutrient loss through leaching and soil and water contamination.
- Ease of application: Liquid fertilizers can be applied more quickly and efficiently through drip irrigation, sprinkling or fertigation systems, which facilitates their use in large crop areas.

In summary, the development of liquid fertilizers offers a series of benefits that make them indispensable in modern agriculture, allowing more efficient and precise nutrition of plants, as well as more sustainable management of natural resources.



Recipe

1 liter of water
140g hair
160g KOH (potassium hydroxide)

Add filtered water to an LDPE plastic container.
Add KOH little by little (wearing protection for eyes, hands, etc.).
Add hair and leave covered for 2 days.
Transfer the mixture to an LDPE bottle

Testing

On 01/08/2023, the application of the "Fertipelo" hair fertilizer was carried out in the Plazuela Román Díaz, located in the city of Providencia, Santiago, Chile.

On 02/02/2023, the first biomass growth measurement was carried out, recording the growth of grass, in each of the 3 areas; in addition to repeating the application of Fertipelo fertilizer

Discussion

- Area 1 (south-west corner) 45.1m² - 10 ml/l
Biomass measurement is carried out in 1 m², recording 1795 g of biomass growth



- Area 2 (northeast corner) 51.5 m² - 4 ml/l
Biomass measurement is carried out in 1 m², recording 2055 g of biomass growth



- Area 3: control, no application
Biomass measurement is carried out in one m², recording 1230 g of biomass growth

Results

A growth of +46% of biomass is recorded in the zone of application of Fertipelo 10 ml/L (compared to the control area) and +67% in the area with the application of Fertipelo 4ml/L (compared to the control area)

The results confirm the increase in biomass growth associated with the use of the fertilizer product; where the concentration with the best results is 4 ml/L

Conclusions

The conclusions from the use of the "Fertipelo" fertilizer and the testing process in Plazuela Román Díaz are the following:

- The application of "Fertipelo" demonstrated a significant increase in biomass growth compared to the control area that did not receive the treatment. A 46% increase in the area treated with a concentration of 10 ml/L and a 67% increase in the area treated with a concentration of 4 ml/L was observed.
- Optimal concentration: It was found that the concentration of 4 ml/L of "Fertipelo" produced the best results in terms of increase in plant biomass. This concentration could be considered the most efficient and profitable for application in future uses.
- Sustainability and benefits: The use of "Fertipelo" not only promotes an increase in plant growth, but also offers environmental benefits by recycling natural resources such as human hair and reducing dependence on chemical fertilizers.

In summary, the testing results support the effectiveness of "Fertipelo" as a viable and cost-effective liquid fertilizer, which not only promotes healthy plant growth, but can also contribute to more sustainable and environmentally friendly agricultural practices.