SILKWORM EXCREMENT: COMPOSITION, BENEFITS, AND POTENTIAL HAZARDS.

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Abstract. Silkworm excrement (Bombyxmori droppings) is a natural waste product excreted during the life cycle of silkworms, widely used in the textile and silk industries. This article explores the chemical composition of silkworm droppings, their potential application as agricultural fertilizer, and precautions that should be taken when using them.

Silkworms (Bombyxmori) are insects primarily cultivated for silk production, and their droppings have recently garnered significant attention in the agricultural and pharmaceutical sectors. Scientific research has identified that silkworm droppings are rich in biologically active compounds, microelements, and plant growth-promoting substances. This article provides a comprehensive overview of their composition, benefits, and possible negative effects[1].

In recent years, demand for eco-friendly and organic agricultural products has been growing. From this perspective, silkworm excrement holds great importance as a natural and renewable resource. Research indicates that it contains many biologically active substances beneficial for plants. However, certain risks must be considered when using it.

Scientific analysis has identified the following main components in silkworm droppings:

- Macronutrients:
  - Nitrogen (N): 2.5–3.5%
  - Phosphorus (P_2O_5): 1.0–1.8%
  - Potassium (K_2O): 1.5–2.5%
- Organic matter: Approximately 60–70%, which makes it a highly effective fertilizer.
- Amino acids and enzymes: Stimulate plant root activity.
- Chitin and its derivatives: Improve soil microflora and help control certain harmful organisms.

Benefits. Silkworm droppings are widely used in enhancing soil fertility, particularly in organic farming. They enrich the soil and increase crop yields.

The enzymes and amino acids in the droppings stimulate the activity of beneficial soil microorganisms, helping to maintain a healthy soil ecosystem[2].

Unlike chemical fertilizers, silkworm excrement does not harm the environment and helps preserve the soil's natural balance.

Potential Hazards.

If not properly processed, silkworm droppings may contain harmful microorganisms that pose a risk of spreading diseases to plants.

In some cases, the dry powder form of droppings may cause adverse effects on human health through inhalation.

Improper storage can result in unpleasant odors and the growth of harmful microbes.

Conclusion. Silkworm excrement is a natural, eco-friendly, and nutrient-rich source of fertilizer that can significantly contribute to agricultural productivity. Proper processing and application can lead to high agricultural yields. However, strict adherence to hygiene and sanitary standards is essential[3].Silkworm droppings serve as a versatile and valuable resource, especially in organic farming and the production of environmentally safe agricultural goods. When correctly handled, they can be used as a high-quality organic fertilizer.

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