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BIO ECOLOGICAL PROPERTIES AND SIGNIFICANCE OF CALIFORNIA RED WORM

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ABSTRACT

The California red earthworm was created as a result of hybridization of different breeds of earthworms in the Eiseniafoet. Red worms are suitable for domestic and industrial cultivation and are also used to feed poultry, fish, animals and fur animals. California worms have the ability to process food faster and more completely than ordinary earthworms. As a result of processing one ton of substrate, the growth of biomass of 600 kg of biohumus and worms reaches 100 kg. California red worms develop over a three-month period and reach sexual maturity. An important factor in their lives is a constant average temperature, humidity and adequate food.

KEYWORDS: *California Red Worm, Anesthetic Species, Vermicompost, Biomass, Germofradite, Population, Biohumus, Substrate.*

INTRODUCTION

Uzbekistan is a world leader in agricultural production. The production of this product in accordance with the needs of the population is growing every year. Earthworms make up the bulk of soil biomass. It is well known that earthworms play an important role in soil formation and maintaining its natural fertility.

There are thousands of species of earthworms, which are grouped into three categories according to their natural behavior and living conditions:

1. Anecic

2. Endogeic

3. Epigeic.

Anecic species — almost always build vertical holes to a depth of 1.5–2 m. They feed on organic matter fermented to a certain extent on the soil surface and turn it into humus. If anesthetic species are deprived of permanent habitat, then they cease to reproduce and grow. They play a very important role in soil formation. Their main species are Lumbricusterrestris and Aporrectodea longa.

Aporrectodeais used as an excellent bait for fish due to the size of the longa.

Species such as Apodeodeacalignosa feed on soils that are less saturated with organic matter, mineral particles of soil with high mineral content, and decomposed organic matter. As it moves through the soil, they mix it and ventilate it. It is also of great importance in enrichment with nutrients and microflora.

Epigey species usually live in the organic matter-rich layers of the topsoil, under leaf clumps or rotten tree trunks.

They are exposed to climate change and predators. A typical representative of this class, known as the California red worm, is the Eiseniafoetida.

Usually used for vermicomposting - mainly Eiseniafoetida (California red earthworm) or Eiseniaandreii worms.

This type of worm can be found in old manure or compost piles. Their distinctive feature is the red lines that are variable and clearly visible.

The red worm is suitable for domestic and industrial cultivation and is also used to feed poultry, fish, animals, and fur animals. When worm biomass is added to the feed, the feed value increases by 20-25%. Worms also contain 67% protein and 20% fat.

Of all the earthworms present in the world, only a few are suitable for artificial breeding.

However, according to their characteristics, the most economically viable species are worms belonging to the genus "Red Worms".

The red earthworm in California was created as a result of hybridization of different generations of earthworms in the Eiseniafoet. This generation was developed in 1959 at the University of California. It reaches a length of 10 cm, a diameter of 3 to 5 mm, and a body weight of up to 10 grams. 2 worms are capable of breeding up to 1.5 thousand per year. The new generation emerges in 21 days, and puberty occurs in 90-120 days. After 1.5 months, the worm population doubles.

California red worm - dark red, elongated, cylindrical, flattened on the abdomen and divided into pieces, each of which has two feathers. The weight of an adult worm is in the range of 0.2-1.0 g. Body temperature is 19-20 ° C. California worms are 4 times more fertile than “wild” earthworms.

It breeds 18-26 times a year, unlike its wild cousins, which breed only 4-6 times a year. Adults live 10-15 years.

California worms have unique characteristics:

• They live in a substrate saturated with organic compounds, not in the soil;

• Consumes twice as much food per day. Approximately 600 kg of vermicompost is obtained as a result of processing one ton of substrate, the increase in worm biomass is 100 kg;

A population of 1.5-2 thousand worms filled with 2-3 m3 of compost can provide garden areas (3-4 hectares) with 2 tons of primary fertilizer.

California worms are hermaphroditic but cannot fertilize spontaneously. However, as a result of mutual fertilization of two earthworms, an egg or capsule is formed in each of them. After 14-21 days, depending on the air temperature, 2 to 20 worms emerge from each capsule or jar, and 20-21 worms can emerge when grown in a greenhouse.

California red worms develop over a three-month period and reach sexual maturity. An important factor in their lives is a constant average temperature, humidity and adequate food.

The number of young worms depends on the temperature in the habitat, but the sexual activity of these worms decreases in the cold months, reaches maximum productivity in the mild season, and decreases again in the warm months.

When the temperature is 19 to 20 ° C, the worms increase humus production and sexual activity. Extremely cold (0 ° C) and very hot (above 42 ° C) temperatures are dangerous for the life of California worms.

California earthworms love the heat. It weakens the instinct of self-preservation at low temperatures and therefore does not penetrate deep into the freezing depth when the habitat cools, but accumulates in large quantities and freezes safely. Therefore, this type of worm needs to be moved to a warm room in winter.

California earthworms have the ability to process food faster and more completely than ordinary earthworms. As a result of processing one ton of substrate, the growth of biomass of 600 kg of biohumus and worms reaches 100 kg.

Biogumus - (vermicompost) - obtained by processing of organic matter (manure, straw, leaves, silage waste, hay, food waste, meat, fruit and vegetable industry, utilities, poultry manure) by worms is a high molecular weight organic compound, rich in nutrients - a biological material that is sticky and odorless black and brown in color.

The worms mainly process the manure of farm animals in an environmentally friendly way, turning it into valuable humus.

Biogumus improves soil structure and its water-physical properties. Contains high amounts of water-soluble forms of nitrogen, phosphorus, potassium and other elements. The soil, together with biohumus, has the property of accelerating plant growth. Biohumus retains moisture up to 70%, which significantly reduces the amount of watering and protects against moisture during the dry period. Overdose of this organic fertilizer does not lead to negative consequences for plants.

Biogumus is widely used in fertilizing all types of crops, in floriculture, horticulture, soil regeneration, as well as in insect control.

California red worm is the most optimal solution for waste disposal, which allows you to get a natural organic fertilizer, vermicompost, which is able to regenerate even "dead soil".

Vermicompost is an organic waste processed by worms that passes through the stomach, changes, breaks down into amino acids and is saturated with vitamins, enzymes, macro- and micronutrients and other biologically active substances.

Comparison of the effects of vermicompost with organic fertilizers (humus and peat) showed that vermicompost is more effective than them. The addition of vermicompost increases the yield of beets by 27%, potatoes - by 19.7%, compared with humus.

Studies have shown that biohumus has a multifaceted positive effect on the agrochemical, physicochemical and biological properties of soils. Biohumusis absorbed directly by plants, where it accumulates large amounts of salt and trace elements, growth substances, vitamins, antibiotics, 18 different amino acids and beneficial microflora.

The chemical effect of biohumus is neutral.

Humus can be used for all crops due to the presence of a complex of nutrients. It serves as a new type of fertilizer, especially for those who require a balanced concentrated form of nutrients in terms of chemical composition.

Biohumus is an environmentally friendly organic fertilizer. Biohumus contains all the necessary nutrients, trace elements, enzymes, soil antibiotics, vitamins, growth hormones - in short, everything necessary for plant growth.

It has a biohumus-granular structure, which does not contain pathogenic microflora, helminth eggs, weed seeds. When incorporated into the soil, the development of processes specific to healthy soil is normalized. Biohumus is easily absorbed by plants during development. It also has properties such as moisture and hydrophilicity. This organic fertilizer is several times more than the humus-containing manure.

In short, biohumus: restores the natural fertility of the soil; binds heavy metals and radionuclides in the soil; prevents plants and soils from accumulating nitrates; provides strong immunity in plants; shortens the fertilization time of seeds; increases vitamin content; increases productivity by 1.5 times; improves plant growth and flowering; increases the diversity of tree leaves, flowers, lawn grasses and protects plants from drying out.

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