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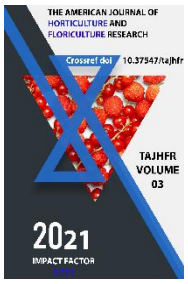

The Role Of Biomass In Saving Natural Resources

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ABSTRACT

Biomass is total mass of all living organisms living on Earth. It is very difficult to calculate the biomass of the earth in exact numbers. However, it is estimated that there are 1.7 trillion tons of living biomass on Earth today.

KEYWORDS

Biomass, flora, fauna, living organisms, timber, industry, agriculture and so on.

INTRODUCTION

On measures to implement the tasks set out in the Strategy of Agricultural development of the Republic of Uzbekistan for 2020-2030 in 2020 January 28, 2020 № 4575 "On rational use of natural resources and environmental protection in the direction of Improvment of the supply system": in many regions and districts, individuals and legal entities have the right to introduce a mechanism for allocating land plots for agricultural purposes through transparent and open competition for agricultural ecology and climate, intended to promote safe practice. According to the decrees of the President, using biological

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fertilizers is important in salving environmental issues.

MAIN PART

Humans think of himself as the owner of the Planet. According to people's opinion, we are the most basic beings on Earth. Actually, this seems absolutely truy: everywhere you can see and observe the human factor, the impact of it's activities. But, honestly we are not the most basic beings on Earth. Especially we are nothing in terms of the Earth's biomass.

Biomass is a callaction of combines of the origins of all organic matter in plants and animals. Biomass is a term of divided into primary-plants, animals, microorganisms and their associated long – term processes into conventional fuels and secondary waste generated in the processing of biomass and things used for human and animal life. Also, waste divide primary-waste from the processing of primary biomass (hay, stems, leaves, shavings, alcohol residues) and secondary products - products of physiological metabolism of humans and animals.

In addition, some European countries use special fast – growing plants as products to prevent deforestation. For example, in Sweden special fast – growing plants for biomass are grown. The amount of arable land of catharsis is determined by the supply of biomass fuel to biomass power plants. Despite to and other fues in the form of biomass after many years of biological processes.

Biomass is a wide range of renewable energy resources and includes word, industrial, agricultural and household wastes. Biomass is divided into combustion, pyrolysis, alcohol or consumable as a source of energy.

Wastes include the primary – the waste generated during the processing of primary biomass (hay, stems and leaves, shavings, alcohol seraps, twings) and the secondary – the products of physiological exchange of humans and animals. Biochemical processing can be used for obtain biogas. Each of these processes have a specific purpose. According to some information, the amount of energy from biomass which add to world energy is 12 %. In the European Union, the amount of energy produced from biomass is only 3 % of total energy, but in some countries, such as Austria – 12%, Sweden – 18%, and Finland – 23%. Primary biomass includes plants that grow naturally on land and in water. Biomass is created by photosynthesis, which means that solar energy is stored in the growing plant mass. The energy efficiency of photosynthesis is on average 5%. Primary biomass is used for generate energy as a fuel to replace conventional fuels. Primary biomass includes forest and wood processing Irrigated agricultural lands in Uzbekistan are mainly cotton, wheat, tobacco, sunflower and melons.

Nowdays, cotton stalks in part in the production of alcohol, paper and a number of building materials. Other plantis stems are discarded or burned. Calculations show that, 350 m^3 (metane, hydrogen) gas can be obtained from 1 ton of plant biomass mixed with wastes. One cow can produce up to 4,2 (litres) m^3 of biogas per day. The energy of 1 m^3 of biogas is equal to 0,6 m^3 of natural gas, 0,74 l of oil, 0,65 l diesel fuel, 0,48 l of gasoline and others. With using biogas saved fuel oil, coal, electricity and other sources of electricity. The introduction of biogas can improve the ecology of live stock and poultry farms and environment of it's location.

How mech gas can you get from manure? Taking into account, the consumption of 26 liters of gas per liter for boil of water, it is

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determined how much gas can be obtained from the following wastes: 7,5-15 liters of boiling water from 1 kg of cattle manure; boiled 19 litres of water from 1 kg pig manure; to boil 11,5-23 liters of water from 1 kg of straw of legumes; to boil 17 litres of water from 1 kg of potato stalks; to boil 27 litres of water from 1 kg stem of tomato.

One of the advantages of biogas is that it can generate heat and electricity anywhere. The process of bioconversion firstly, fermented manure increases crop yields by 10-20 % compared to conventional manure.

Secondly, the seeds of weeds, compounds of various microbes, helminth seeds and unpleasant adors in manure are last when the waste is fermented.

This history of biogas and device.

In 17th century, Jean Baptita Van Helmont discovered the release of comustible gas from decomposing biomass. In 1776, Alexandro Volta discovered, that there was a correlation between decomposing biomass and the amount of releasing gas. In 1808, sir Humphrey dewey found the precence of methane in biogas. The first biogas construction was built in 1859 in Bombay, India. In 1895, biogas was used to illuminate street lights in the United Kingdom. By 1930, as a result of the development of microbiology, bacteria involved in the process of biogas separation hold been identifield.

Production.

Nowadays, there are about so types of biogas constructions in the world. The most common method is anaerobic fermentation in methane tanks or anaerobic columns. A certain keep the process going. Methane tank heating is not required in high temperature countries.

Environmental benefits of biogas production.

Biogas production prevents the release of methane into the atmosphere. Because methane is the most dangerous chemical element for human health.

The effect of methane on the greenhouse gas effect is 21 times stronger than that of carbon dioxide.

Recycled manure eliminates the use of chemicals and that reduces groundwater pollution. Thus, biomass and biogas reduce the release of harmful gases into the atmosphere, clean environment and allow to produce electricity and hot water.

The environmental benefits of biomass and biogas include:

Reduction of methane emissions into the atmosphere;

The amount of gas and coal used to generate electricity will be reduced, trees will not be cut down for firewood, amount of greenhouse gasses and other harmful substances will be reduced;

Reduced emissions of wastewater into the environment;

Trees and other plants will be preserved, chemical fertilizers will be reduced, atmosphere will be fresh.

Utilizing biomass.

If the fermentation is constantly stirred at the optimum temperature, when the product unloaded in time and the fermented mass removed in time, 1-2 m^3 of biogas is released

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from 1 m^3 of the reactor. When bird droppings are using, it will be 4 m^3 of biomass.

Calculations show that, 1,5-2 m^3 of gas can be extracted from 1 cow's excrement per day, 1 m^3 from a calf, 0,2 m^3 from a pig, and 0,015 m^3 from a chicken. Biogas contains 55-70 % methane and 26-24 % CO_2. The heat capacity of 1 m^3 of biogas is 20-25 mdj G' m^3, which is equivalent to 0,6 liters of gasoline, 0,85 liters of alcohol, 1,7 kg of wood and 1,4 kW of electricity. The most comfortable way to use biogas is to convert it into mechanical electrical energy. At the Farmer's Association in Petrovka, Moscow district, Kyrgyzstan, power generators with a capacity of 30 kW can eassly provide with energy number of households.

Biogas can be used as a fuel in car engines. The efficiency of biogas is determined by it's SW 4 and impureties.carburetor engines run on methane as diesel engines.

It is highly efficient when used in diesel engines, because gas is a high octane fuel. The biogas produced by the farmer's. Association is enough for the operation of two carburetor vehicles. In addition, biogas is used in the production of dry ice, acetylene, formaldehyde, methylene, chloroform, as well as many other valuable chemical products.

Nowdays, the world's environmental problems are not only complex, but also multifaceted. It is present in almost all areas of material production. That's why we must preserve our environment carefully. Our unlimited consumption of electricity leads to similar environmental pollution and depletion of natural resources.

CONCLUSION

Preliminary calculations show that 350 m^3 (methane, hydrogen) of gas can be oftained from 1 ton of plant biomass mixed with waste. One cow can produce up to 4.2 m^3 of biogas per day. The energy of 1 m^3 of biogas equal to 0.6 m^3 of natural gas, 0,74 l of oil, 0,65 l of diesel of fuel, 0,48 l of gasoline and other. Using biogas saves fuel oil, coal, electricity and other sources of electricity. The introduction of biogas equipment will improve the ecology of livestock and poultry farms and the environment in which they are located.

How much gas can you get from one kilogram of manure? It is determined that how much water waste, consumption of 26 liters of gas for boil one liter of water:

1 kg of cattle manure for boil 7,5-15 liters of water;

1 kg of pig manure for boil 19 liters of water;

1 kg of bird drop pings for boil 11,5-23 liters of waters;

To boil 17 liters of water from 1 kg of potato stalks;

1 kg of straw of legumes for boil 11,5 liters of water;

Boil 27 liters of water from 1 kg of tomato stalks.

One of the advantages of biogas is that it can generate heat and electricity anywhere. The process of waste bioconversion solves two other problems in addition to solving the energy issue.

First, fermented manure increases crop yields by 10-20 % compared to conventional manure.

Second, when the waste is fermented, it losts the seeds of weeds, compounds of various microbes, helminth seeds and unpleasant odors in large quantities in the manure.

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