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Popular Article

Management of household food waste to be fed to pigs

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Introduction

In the recent years, the very issue of food waste management has become a global concern and an alarming topic. According to the Food and Agriculture Organization (FAO), one-third of all food produced worldwide goes to waste each year. The amount of food waste which is generated in the common households is very high, with studies and statistics showing that up to 50% of household waste comprises of food items [1]. Because of the disposal of food waste, it contributes significantly to many such environmental phenomena like greenhouse gas emissions and others, which in turn, contributes to climate change which automatically affects us. One solution which can be provided to this problem is to feed the household animals with food waste. In this article we will explore the management of household food waste to be fed to household animals.

Benefits of Feeding Household Food Waste to farm Animals

Feeding household animals with food waste has several benefits. Firstly, it reduces the amount of food waste that ends up in landfills, where it eventually contributes to greenhouse gas emissions [2]. Secondly, it provides us with a cheap source of food and nutrition for animals. This is particularly very beneficial for households that keep animals, such as chickens, pigs, and goats. Thirdly, it reduces the amount of money spent on animal feed, as food waste can act as a valuable supplement to commercial feed. Fourthly, feeding food waste to animals reduces the amount of methane gas produced during the decomposition of organic waste, which is a potent greenhouse gas since less amount of household food is now being disposed of in the



landfills. We know that not all types of food waste can be fed to the farm animals and household animals [3]. It is essential to understand what types of food waste are safer for household animals and which ones should be avoided. The waste is composed mainly of seed, skin, rind, and pomace, containing good sources of potentially valuable bioactive compounds, such as carotenoids, polyphenols, dietary fibres, vitamins, enzymes, and oils. Figure 1 shows the detailed structure of foods which can be fed to animals and how they are important for their growth and development.

Types of food waste that can be fed to household animals

- Fruits and Vegetable peel- Fruits and vegetables are a good source of vitamins and minerals not only for animals but also for us. The leftover or the peels are safe to be fed to animals, if they are not spoiled. Examples of fruits and vegetables that can be fed to animals include carrots, apples, lettuce, and bananas and sometimes the fresh peels of the fruits and vegetables can also be fed because it contains iron and fibre contents [4].
- Grains - Grains such as rice and bread can also be fed to animals. However, it is important to ensure that grains are not spoiled or rotten. Spoiled grains can make them sick and can further complicate the problems.
- Meat and Fish- Although most of the farm animals are herbivorous in nature yet some of them like pigs are omnivorous. Moreover, meat and fish waste especially generates a large amount of greenhouse gases, so feeding of meat and fish waste can be an alternative solution to avoid greenhouse emission. According to the 1980 swine health protection act the Food waste to be fed to pigs must be heat treated in order to eliminate the risk of foreign animal disease and any other harmful pathogens.

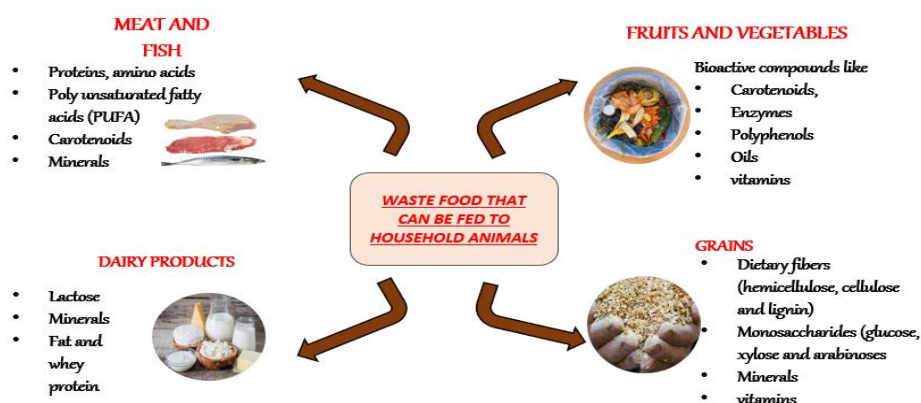


Figure 1. Different types of food waste materials that can be fed to house hold animals specially pigs.

- Dairy Products- Dairy products such as cheese, yogurt, whey can be fed to animals if not spoiled. Whey is the rich source of energy comprising of 27 kcal/100gms. However, it is important to note that some animals may be intolerant to the lactose, an example may be cats although they are not farm animals, but they are domesticated animals and feeding them dairy products can make them sick.

Types of food waste that cannot be fed to household animals

There are some foods or components of food which should not be given to animals in order to avoid any kind of harm or discomfort in animals like [5]

- Spoiled or Mouldy Food- Feeding animals expired, spoiled or mouldy food can make them sick. They should also not be fed with food which are emitting odour or may have a change of colour from their usual colour.
- Chocolate- Chocolate contains theobromine a chemical which is toxic to animals. Feeding animals chocolate can lead to vomiting, diarrhoea, and even death. So, it is also normally advised that animals like farm animals and even domestic animals like dogs and cats should also be not fed with chocolates.
- Grapes and Raisins- Grapes and raisins are some of the foods that can cause kidney failure especially in dogs.
- Onions and Garlic- Onions and garlic contain compounds that can damage red blood cells in animals. Feeding animals leftover food with onions or garlic in it can lead to anaemia.
- Feeding the household animals with food waste is an effective way of reducing the amount of waste that ends up in landfills and which contributes to greenhouse gas emissions. It also acts as a cost-effective and cheap way of providing food for animals while reducing the amount of money spent on buying their food and feeding them. Proper management of household food waste is also essential to ensure that the waste food which we are feeding to the animals is safe for them to consume and does not cause them any health problems or any conditions in future. We have discussed here some of the ways through which food waste given to the household farm animals can be managed and sorted [6].

1. Sorting of Food Waste

The first step in managing household food waste for animal feeding is sorting of the waste products. The waste should be divided into two broad categories, the edible and non-edible (cannot be fed). Food waste that can be fed to animals may include- fruits, vegetables,



grains, meat, and fish (already mentioned above in figure 1) although if they are in good conditions and not too spoiled. On the other hand, food waste that cannot be fed to animals includes spoiled or mouldy food, chocolate, grapes, raisins, onions, and garlic. Sorting the food waste helps to ensure that only safe waste is fed to animals, reducing the risk of health problems. This system should be adopted by everyone who is feeding the animals with household waste because sometimes the waste may contain some harmful chemicals and food products which may not be suitable for the animals and can lead to illness among them.

2. Storing of Food Waste

Another good method apart from sorting may be storing of the food waste that can be fed to animals. But it should be stored separately from waste that cannot be fed to animals otherwise the storing process will be of no use. The food waste should be stored in a secure container to prevent contamination by pests and insects such as rats, mice and other organisms. The container should be labelled well to ensure that only safe waste is fed to animals. It is important to note that some food waste such as meat and fish can be spoiled quickly, and therefore, it is essential to store them in a very cold conditions such as in a refrigerator or freezer to prevent spoilage.

3. Feeding of Food Waste

The third step after sorting and storing should be feeding of food waste to animals done in moderation. Feeding animals too much food waste can lead to health problems such as obesity and digestive problems which may lead to irritability. The amount of food waste fed to animals should be based on the animal's nutritional requirements, their daily activity and the

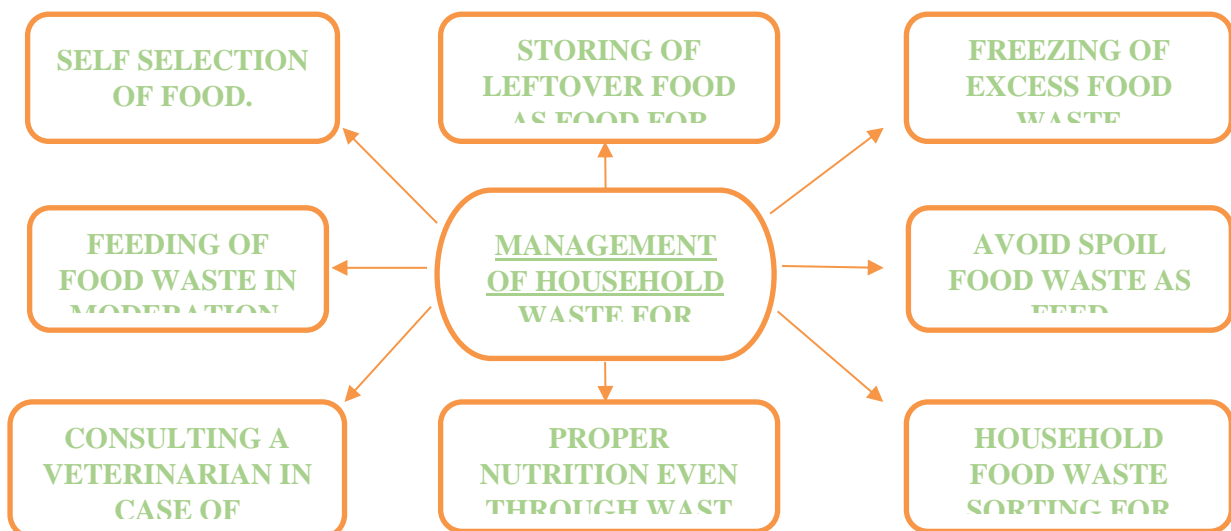


Figure2. Different ways to manage house hold food waste

type of waste being fed should be monitored. For example, feeding animals too much meat and fish waste can lead to an imbalance of nutrients in their body which can ultimately lead to



fatigue and other problems, while feeding too many fruits and vegetables can lead to diarrhoea and stomach upset.

4. Supplementation of Animal Feed

Lastly, we should keep in mind that the food waste should not be the sole source of nutrition for animals. Instead, it should be used as a supplement to act for commercial feed which should be provided to them, which provides animals with real essential nutrients. The amount of food waste used as a supplement should be based on the nutritional value of the commercial feed and the animal's nutritional requirements. For instance, feeding animal a diet high in carbohydrates such as bread can lead to an imbalance of nutrients, and therefore, it should be fed in moderation [7].

Policies, rules, and regulations regarding the management of household food waste may vary depending on the country or region. However, here are some common policies and guidelines that may apply:

- **Waste Hierarchy:** Many countries and regions have adopted the "waste hierarchy" which prioritizes waste management methods in order of preference: reduce, reuse, recycle, and dispose. This means that reducing food waste by preventing it from being generated in the first place is the preferred method of management.
- **Food Waste Separation:** Many cities and municipalities have implemented programs for the separate collection of food waste from other household waste. This helps to ensure that food waste is diverted from landfills and can be used for composting or animal feed.
- **Composting:** Composting is a common method of managing food waste, which involves the breakdown of organic materials into a nutrient-rich soil amendment. Many municipalities offer programs for curb side collection of food waste for composting.
- **Animal Feed:** In some regions, food waste can be used as feed for livestock or household pets. However, it is important to follow regulations and guidelines regarding the types of waste that can be fed to animals and the proper methods of storage and feeding.
- **Landfill Bans:** Some jurisdictions have implemented bans on the disposal of organic waste in landfills, including food waste. This helps to reduce methane emissions and promote more sustainable waste management practices.
- **Education and Outreach:** Many governments and organizations have implemented education and outreach programs to raise awareness about the impacts of food waste



and promote proper management practices. This can include information about reducing food waste at the household level, proper storage and separation of food waste, and the benefits of composting and animal feed.

- **Food Recovery Programs:** Food recovery programs are designed to redirect surplus food that would otherwise go to waste to those in need, such as food banks or charities. These programs can help to reduce food waste while addressing food insecurity in local communities.

Conclusion

Proper management of household food waste is essential for feeding animals safely and for reducing the amount of waste that ends up in landfills. Sorting the food waste into safe and unsafe waste, storing it properly, feeding it in moderation, and supplementing commercial feed are all critical steps in managing household food waste for animal feeding. By following these steps, households can contribute to reducing greenhouse gas emissions while providing their animals with a cheap source of food. Further, policies and guidelines for managing household food waste like waste hierarchy, food waste separation, composting, animal feed, landfill bans, education and outreach, and food recovery programs should be followed. By implementing these policies and practices, households can contribute to more sustainable waste management and help to reduce the negative impacts of food waste on the environment and society.

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