Chapter 4
Crop Waste to Livestock Feed and Livestock Waste to Soil

ABSTRACT

Significant waste but edible biomass and fuel that can be utilized as raw materials are available locally. With internal efficiencies of recycling of nutrients in an integrated farming system and appropriate technologies, such waste can be optimized for the production of livestock feed and potting soil. These items are pivotal to the productivity and efficiency of sustainable farming. Once the initial set up cost can be laid out, the operation can be self-propelled to larger scales with economic benefits at the farm level as well as at the national level. There has been the argument that livestock feed requires large acreages under grain production which is not feasible in small economies of scale and in the context of small island developing states. The paradox is that there is high cost to produce waste which is not utilized and is a loss to the enterprise.

INTRODUCTION

The most significant input of livestock production is feed (about 75% of total cost), and the most significant input of livestock feed is protein (about 60% of total cost). Imported Livestock Feed to St. Kitts-Nevis for several years has been averaging US$15 per 50 pound bag (33 US cents per pound), even with governmental support, while storage and decomposition also posed problems for imported feed. The feed is imported from various Caribbean countries from time to time through the Department of Agriculture as a non-profit

DOI: 10.4018/978-1-5225-7934-2.ch004
activity to make it available to livestock farmers. Those suppliers utilize some imported raw materials or byproducts from other industries using imported raw materials to manufacture livestock feed. Even so, the protein content of imported feed ranged from only 18% to 21%. A higher percentage (about 24%) is required for competitive production.

Despite such support to livestock farmers with imported feed, St. Kitts-Nevis farmers cannot produce poultry meat at competitive prices with imported chicken and is therefore practically non-existent. Poultry eggs are produced but at a relatively high cost to consumers. Pork production suffers from similar effects, and although there has been significant improvement in pig ranching in recent years there has been a significant stagnation over the past year due to lower prices of imported pork. The major determining factor for local producers in St. Kitts-Nevis is the high cost of imported feed. Although the competition can be buffered by a policy solution to protect local farmers, there is the competing interest of supermarkets, restaurants, and the general population of consumers with whom the disparities have to be reconciled. The solution is to reduce the cost of livestock feed, which is a primary objective of the integrated farming concept, here presented.

Various economic uses can be obtained from organic wastes and prevent pollution, including organic fertilizer by composting. Non-farm waste, e.g. Sargassum Seaweed that is now prevalent and a menace on Caribbean seashores that can also be used to produce organic fertilizer. Gliricidia, Leucaena, and Moringa that are high in nitrogen and protein can also be used as organic fertilizer and livestock feed, respectively. Similarly, fish waste and some types of garbage can be processed and used for similar purposes. In most cases on the farm, waste is left in the field or cleared and dumped or burned, but they can be processed and returned to the farm so that there would be less cost in buying chemical fertilizers and other economic and environmental benefits already discussed in Chapter 3. Moreover, it can be processed and sold to generate an additional income stream for the farmer.

ISSUES AND OPPORTUNITIES OF FARM WASTE

Alexander, et al (2017), noted that there are losses at every stage in the food system which can otherwise be used to meet nutritional requirements of a growing global population, but that is beyond the scope of this book. However, such waste can be otherwise returned to the farm to enhance productivity. They estimated the magnitude of such waste as to the following extent:
This title is available in InfoSci-Books, InfoSci-Engineering, InfoSci-Environmental, Agricultural, and Physical Sciences, Science, Engineering, and Information Technology, Practice, Progress, and Proficiency in Sustainability. Recommend this product to your librarian:
www.igi-global.com/e-resources/library-recommendation/?id=1

Related Content

Factors Influencing Acceptance and Use of ICT Innovations by Agribusinesses: A Conceptual Framework
Driving Agribusiness With Technology Innovations (pp. 39-55).
www.igi-global.com/chapter/factors-influencing-acceptance-and-use-of-ict-innovations-by-agribusinesses/180145?camid=4v1a

Crop Waste to Livestock Feed and Livestock Waste to Soil
(2019). Optimizing the Use of Farm Waste and Non-Farm Waste to Increase Productivity and Food Security: Emerging Research and Opportunities (pp. 131-164).
www.igi-global.com/chapter/crop-waste-to-livestock-feed-and-livestock-waste-to-soil/221251?camid=4v1a

Correlations and Patterns of Food and Health Consumer Expenditure
Adrian Stancu (2016). Food Science, Production, and Engineering in Contemporary Economies (pp. 44-101).
www.igi-global.com/chapter/correlations-and-patterns-of-food-and-health-consumer-expenditure/152441?camid=4v1a
Multiple Exploration of Entrepreneurs’ Suggestions for Agricultural Development of Local Regional Units in Greece
www.igi-global.com/chapter/multiple-exploration-of-entrepreneurs-suggestions-for-agricultural-development-of-local-regional-units-in-greece/180154?camid=4v1a