Chapter 6

Utilization of Agro Waste: An Approach for the Administration of Healthy Environment and Public Domain

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ABSTRACT

Agro-wastes are one of the major sources for nutritional and therapeutic purposes along with other beneficial properties according to some ongoing studies. Yet they are not being utilized properly; instead, these wastes are being discarded in open air, causing pollution. Conservation of such natural resources is a healthy approach, and it’s economic and eco-friendly, too. Novel formulated food products from these agro-wastes can be utilized as an unconventional source of nutrients and a therapeutic weapon for diseases such as diabetes, hypertension, etc. along with normal human consumption. Utilization of such agro-wastes as food products will also be useful to combat malnourished state leading to rural development and maintenance of food security in cheap prices for a healthy seeks. It also shows a possible role as antibiotics, antioxidants, anti-inflammatory agents, adsorbents, enzyme extracting sources, insulators, and food additives along with its contribution in solid state fermentation, beneficial in dairy industries.

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INTRODUCTION

Recognition of the by products resulting from the industrial or societal process is very much crucial for the waste management instead of disposing them into air or water, burying in land or burn them. They may be a very good source of nutrients. Sole composition of these agro wastes may not be the appropriate balance of nutrients for the other utilizations such as, value added food production; combined with one another can be low cost sources of health benefits. The most economical method to dispose rice husk is considered to burn it to ashes. This husk ash from the milling industry as well as the field is causing environmental pollution leading to major difficulty. Major economic way to recycle these wastes is the formation of value added products (Anuj kumar et al. 2015). This husk ash contains silica predominantly along with other elements such as potassium, magnesium, calcium. Dumped wastes in open environment causes water as well as land pollution becoming one of the causes of global climatic changes in twenty first century (Shi et al. 2010). Gathering attention to dispose in innovative ways and utilizing these agro wastes is really a matter of concern (Zhang et al 2015).

Reducing agro losses during industrial processing and to make use of by-products appropriately for human feed is now a major global alarm. Before utilizing such wasted parts their nutrient as well as anti-nutrient breakdown is very much needed to understand to check the consumable properties along with toxicities, if any.

Almost 70% yield of rice as the major one is recorded and rests are unconsumed part, utilized as animal feed. These wastes consist of rice husk, rice bran and rice germ. During polish of rice 1-17% broken rice is also generated which is consist of broken kernels. Almost 2.95 million tons de-oiled rice bran production has been recorded just for animal fed. Mung bean bran, also called chunni in India, consist of broken parts of bean, is rich in protein. 50% of the buffaloes feed is consist of bran of mung maintaining proper nutrition in cattle fed (Krishna et al. 2002). Chickpea by-products (bran, straw and husk) are highly nutritive and a large amount of it is consumed by animals. Almost 10-11% bran is produced during processing (Kanatt et al. 2011).

Global population and its subsequent increment is one of the most critical challenges for the future. Additional food demand, malnourished condition is going to create a terrible concern in the coming timeline of human kind until and unless maintenance of post-harvest losses and food security is considered from now only. It is expected that population mark will rise up to 9.1 billion people by the year 2050 and almost 70% extra food requirement will be needed to avoid hunger issues (Godfray et al. 2010, Hodges et al. 2011, Parfitt et al. 2010). Though developing countries already started to improve their agricultural condition and productions, awareness regarding post-harvest loss (PHL) is still not sufficient. Less than 5%
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