

Research
Paper

An economic analysis of alternative methods of cattle dung disposal in Ludhiana city of Punjab

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ABSTRACT

Rapid growth of urbanization, upcoming of residential buildings around the dairy complexes has led to the environmental problems especially with the disposal of cattle dung in the cities. To analyse the various methods of disposal of cattle dung and to analyse the economics of various methods of cattle dung disposal, the study was conducted in Haibowal Dairy Complex in Ludhiana city of Punjab state. Draining away the cattle dung with high pressure of water, making the cow dung cakes, making farm yard manure out of the cattle dung and selling the cattle dung to the high rate bio-methanation power plant located in the Haibowal dairy complex were the four methods of cattle dung disposal prevalent among the dairy farmers taken under the study. A majority of the farmers drain away the cattle dung due to some socio-economic reasons. About half of the cattle dung was disposed away by method A. More than one fourth of the cattle dung was being supplied to the power plant for the generation of electricity. Capital investment calculated both at per farmer and per cattle basis was found to be high in method A and on the other hand, returns were nil as whole of the dung is drained away uneconomically under this method. Annual net returns were found the highest in case of method B while the same were the least in case of method D at both per farmer and per cattle basis. Similarly benefit cost ratio at both the levels was found highest in method B while it was least in method D, the reason being the nominal price of cattle dung which is supplied to the power plant under method D as compared to that of the cow dung disposed in method B. Thus, the eco-friendly method of disposing the cattle dung was lesser suitable on economic grounds. Efforts can be made in fixing the price of cattle dung at higher level so as to encourage the dairy farmers to dispose off the dung through this method for the cause of energy conservation.

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INTRODUCTION

Dairying in India has emerged as an independent agricultural enterprise. A large number of dairy farms have come up in the urban and suburban areas of the country, which fulfill a part of the need of urban population (Chand *et al.*, 2002). These dairies run on commercial basis, help in increasing the supply of milk to the urban population and supplement nutrients in their diet. Besides the large quantities of milk, a considerable amount of dung is also produced. On an average, one dairy animal produces around twenty thousand kilograms of cow dung a year (<http://www.planetart.com>). This dung is the waste produced by animals. The disposal of the waste depends upon the one's economic needs, availability of time and the efforts one can put in. Anyhow for some of the dairy farmers, it is a problem but for others, may be few, apart from the income from milk, the cattle dung so produced

also augments their of income. Rapid growth of urbanization, upcoming of residential buildings around the dairy complexes has led to the environmental problems especially with the disposal of cattle dung in the cities. If it accumulates, it releases offensive odors into the surrounding area; it provides a spawning ground for vermin. On drying, it is a source of unsavory dusts; in rainstorms, it produces runoff high in biochemical oxygen demand and it may be a source of certain infectious agents found in streams. In the absence of storing capacity, the dairy farmers in cities generally use water extensively for flushing the waste into drains. In this way a lot of potable drinking water is wasted and it leads to pollution and other related problems. Cow dung is also recycled as domestic fuel or farm manure. Crowded together at a new breed of mega farms livestock produce three times more waste than people, more than can be recycled as fertilizer for nearby fields. The excess manure gives off air pollution