

# Livestock Importance in Organic Farming

**D Udhaya Nandhini<sup>1\*</sup> and S Suganthi<sup>2</sup>**<sup>1</sup>Department of Sustainable Organic Agriculture, India<sup>2</sup>Department of Spices and Plantation Crops, India**\*Corresponding author:** D Udhaya Nandhini, Senior Research Fellow, Department of Sustainable Organic Agriculture, Tamil Nadu, India**Submission:** September 04, 2018; **Published:** September 07, 2018

## Abstract

Livestock integration plays a major role in the life of farmers of developing countries like India. It provides food, income, employment and many other contributions to the farming community. Integrated crop-livestock is advocated to be very promising in boosting food productivity and soil fertility owing to its numerous synergistic benefits. This paper considers the imperatives of integrated crop-livestock including nutrient cycling and soil fertility restoration..

**Keywords:** Livestock; Crop; Integration; Benefit; Farming community

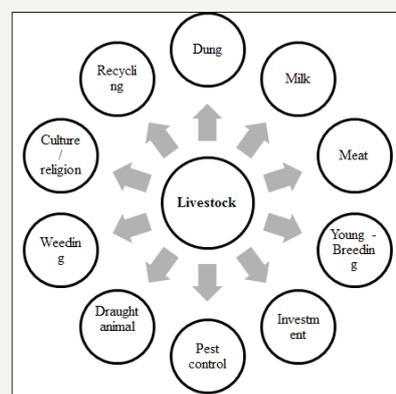
## Introduction

Every nation must diminish its reliance on external sources for its fundamental need-sustenance. A critical piece of food security is that every one of the sources of info ought to be locally accessible and cheap. Only a cow can guarantee this. The whole farming input sources are given by the cow. Bull power ensures ploughing and transportation.

Mixed farming involving crops and livestock integration has been a way of life since the beginning of agriculture. It is widely realized that this is the only method of providing additional income and employment to the agrarian families. Integrating livestock component into crop is one of the principles of organic farming. In temperate and arid zones, livestock plays an important role in

the recycling of nutrients, while it is less emphasised in the humid tropics. Diversification into livestock keeping expends the risk reduction strategies of farmers beyond multiple cropping and thus increases the economic stability of the farming system. Farm animals can upgrade crop productivity by heightening supplement and nutrient based energy cycles.

The benefits of crop-livestock interactions are several, animal traction could improve the quality and timeliness of farming operations, thus raising crop yields and farm household incomes. Farm animals might provide manure to improve soils. Livestock sales would generate cash to buy inputs. Keeping animals on the farm could also provide a gainful use for other resources such as crop residue, which might be wasted in the absence of animals.

**Figure 1:** Importance of livestock.

Livestock provides major additional contribution agriculture through draft power, manure, fuel and as a fertilizer, animal products such as meat, milk, eggs while poultry provide daily cash income and much required nutrition to farmers. Figure 1 summarizes the importance of livestock in daily life of farmers. Livestock play an even more critical role on organic farms than they do on conventional farms. Integration of livestock and crop allow nutrients to be recycled more effectively on the farm.

Manure itself is an important manure containing 8kg of nitrogen, 4kg of phosphorus and 16kg of potassium to the tone [1]. Adding manure to the soil not only fertilizes it but also improved its structures and water retention capacity [2]. The result of this cyclical combination is the mixed farming system, which exists in many forms and represents the largest category of livestock systems in the world in terms of animal numbers, productivity and the number of people it services. Animals play key and multiple roles in the functioning of the farm and they provide livestock products (meat, milk, eggs, wool, and hides) or can be converted into prompt cash in times of need. Animals transform plant energy into useful work: animal power is used for ploughing, transport and in activities such as milling, logging, road construction, marketing, and water lifting for irrigation.

### Livestock on an organic farm play a key role

**Nutrient cycling:** Nitrogen fixed by leguminous plants and different nutrients devoured by farm animals amid brushing are come back to soil through dung and urine. Overseen painstakingly, farm animals and manures can assume an imperative part in nutrient cycling on the organic farming.

In feedlots, it is important to store and discard manure and urine in a naturally acceptable way. Excreta contain several nutrients (including nitrogen, phosphorus and potassium) and organic matter, which are important for maintaining soil structure and fertility. Stubble in the fields and crop residues are important sources of forage in smallholder systems. Lower mature leaves stripped from standing crops, plants thinned from cereal stands and vegetation on fallow fields offer additional fodder resources related to food cropping. When animals consume vegetation and produce dung, nutrients are recycled more quickly than when the vegetation decays naturally. Grazing livestock transfer nutrients from range to cropland and concentrate them on selected areas of the farm.

**Weed control:** Farm animals are utilized widely for weed control on natural farming. For example, they can graze down weeds either before sowing a crop or after crop establishment for weed control and to enhance tillering. Crops can be selected for their palatability. Farm animals specifically touch out weeds and keep away from the less palatable fodder.

**Pasture and crop establishment:** Farm animals can help with planning the ground for planting. For instance, they can help with stubble management by brushing and trampling the stubble.

**Insect and disease control:** Fodder part of the mixed cropping system builds a critical fertility and structure building phase into

rotations and intrudes the potential for the development of insects and disease.

**Land preparation for cropping:** Farm animals such as pigs can ‘plough’ rough or new land before planting vegetables or grains, reducing tillage and weed control costs.

**Soil water storage:** It results in greater soil water storage capacity, mainly because of biological aeration and the increase in the level of organic matter.

**Providing energy:** Excreta is the basis for the production of biogas and energy for household use (e.g. cooking, lighting) or for rural industries. Fuel in the form of biogas or dung cakes can replace charcoal and wood.

### Different forms of manures

**Farmyard manure:** Farmyard manures alludes to the disintegrated blend of dung and urine of livestock alongside litter and left finished material from roughages or pasture nourished to the cows. On an average well decomposed farmyard manure contains 0.5 per cent N, 0.2 per cent P<sub>2</sub>O<sub>5</sub> and 0.5 per cent K<sub>2</sub>O.

**Sheep and goat manure:** Excreta of sheep and goats contain higher nutrients than cattle manure and compost. On an average, the manure contains 3 per cent N, 1 per cent P<sub>2</sub>O<sub>5</sub> and 2 per cent K<sub>2</sub>O. It is applied to the field in two ways. Generally sheep or goat shed sweepings are placed in pits for decomposition and later used for field application. The nutrients present in the urine are squandered in this strategy. The second method is sheep penning, wherein sheep and goats are kept overnight in the field and urine and dung added to the soil is incorporated to a shallow depth with harrow or cultivator.

**Poultry manure:** The droppings of birds ferment rapidly. If left exposed, 50 percent of its nitrogen is lost within 30 days. It contains more nitrogen and phosphorus compared to other bulky organic manures. The average nutrient content is 3.03 per cent N; 2.63 per cent P<sub>2</sub>O<sub>5</sub> and 1.4 per cent K<sub>2</sub>O.

**Other concentrated organic manures:** Blood dinner when dried and powdered can be utilized as manure. The meat of dead animals is dried and changed over into meat meal which is a decent source of nitrogen. Nutrient content of concentrated organic manures is given as follows Table 1 [3].

**Table 1:** Nutrient content of different concentrated manures [3].

Organic Manures	Nutrient Content (%)		
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
Blood meal	10-12	1-2	1.0
Meat meal	10.5	2.5	0.5
Fish meal	4-10	3-9	0.3-1.5
Horn and Hoof meal	13	-	-
Raw bone meal	3-4	20-25	-
Steamed bone meal	1-2	25-30	-

### Conclusion

Integrated crop-livestock farming system offers scope to promote organic agriculture; and carry-over of carbon and nutrients from one cropping season to the next. Farm holders according to their resource availability if mixed farming is followed they can improve their livelihoods and standard of living.

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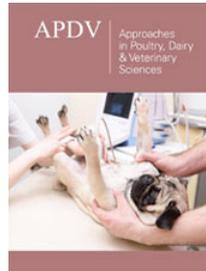
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