

Organic fertilizers for soil prosperity

Madhusudana Rao

District Water Management Agency, India

Abstract:

Present day intensive agricultural practices depend largely on external inputs like fertilizer and pesticides. But the inputs do not come for free. They are priced high and therefore the rising production costs and negative impact on the soil environment are leading several farmers to consider alternate practices that are environmentally safe and sustain soil fertility. The need of the hour therefore is to form a conscious move towards sustainable practices that don't affect the environment and at an equivalent time help growers to get a good yield. The dung and urine from the milch animals which are normally wasted or utilized with none value addition is converted into valuable vermin compost which improves soil fertility commands a better price and finds ready local market. The bio beverages, bio pesticides and bio fertilizers originated from cattle have proved to yield wonderful results with none side effects. Even the Mission Kakatiya designed by the government of Telangana aims to improve soil fertility through the silting up of water bodies in rural areas to improve the water catchment area. This silt contains all the essential minerals that contribute to soil health in a natural way.

The development of methodological strategies that leave the prediction of the fetal sex in cattle still remains a zotechnical challenge. Different methods have been implemented to direct the management of animals, giving producers an advantage in decision-making regarding activity planning and financial gains. Fetal nucleated cells reaching maternal peripheral circulation throughout the placental barrier is a well-recognized phenomenon. Thus, pregnant females will have circulating fetal DNA during pregnancy following a temporal relation between gestation and appearance and an increase in the concentration of fetal DNA in maternal plasma. The objective of this study was to gauge the utilization of polymerase chain reaction analysis (PCR) of fetal cells/DNA within the maternal plasma of pregnant cows to work out the sex of the fetus. Plasma was harvested from 35 cows of mixed genotype at different stages of pregnancy ranging from 5 to 35 weeks. A male calf and a heifer calf provided the control samples. Fetal sex decided by amplification of Y-specific sequences. For the 35 cows, the fetal sex predicted by this system was in accordance with the sex of the calf at birth in 88.6% of cases. The agreement between predicted and observed fetal sex was less for cows with a gestational length of 35-48 days (63.6%). Regression analysis showed that there was a strong relationship between the probability of correctly predicting fetal sex and the stage of gestation. It was estimated that the test performed at 43.8 days post fertilization would have 95% accuracy, increasing to 99% accuracy for testing at 48.4

days and 99.9% accuracy for tests at 55.0 days or later. It was concluded that PCR analysis of fetal cells in maternal plasma are often wont to predict successfully the sex of the fetus in cattle.

The organic movement in India has its origin in the work of Howard who formulated and conceptualized most of the views which were later accepted by those people who became active in this movement. Organic farming can be a production system that avoids, or largely excludes, the use of synthetic fertilizers, pesticides, growth regulators and feed additives. The objectives of environmental, social and economic sustainability are the foundations of organic farming. Key features include protecting long-term soil fertility by maintaining organic matter levels, promoting soil biological activity, careful mechanical intervention, nitrogen self-sufficiency through the use of legumes and biological biological process, efficient recycling of organic materials, including crop residues and livestock wastes and weeds, and disease and pest control based entirely on crop rotation, natural predators, diversity, organic manure and resistant varieties. A great emphasis is placed to maintain the soil fertility by returning all the wastes to it chiefly through compost to minimize the gap between NPK addition and removal from the soil. Today, the burgeoning population pressure has forced many countries to use chemicals and fertilizers to extend the farm productivity for meeting their ever-increasing food requirements. The prolonged and over usage of chemicals has, however, resulted in human and soil health hazards along side environmental pollution. Farmers within the developed countries are, therefore, being encouraged to convert their existing farms into organic farm.

The key factors affecting consumer demand for organic food is the health consciousness and the willingness of the public to pay for the high-priced produce. In general, consumers of organic products are an affluent, educated and health-conscious group, spurred by strong consumer demand, a generous price premium and concerns about the environment. Because of these hidden benefits, conventional producers are turning to organic farming. In Europe, government policies aim to stimulate the organic sector through subsidies, consumer education and support in the form of research, education and marketing. Agricultural practices in India date back around 4000 years, and organic farming is extremely native to the present country. As mentioned in Arthashastra, farmers within the Vedic period possessed a good knowledge of soil fertility, seed selection, plant protection, sowing seasons, and sustainability of crops in several lands. The farmers of ancient India adhered to the natural laws and this helped in maintaining the soil fertility over a relatively longer period of time

Email: madhuapdairy@gmail.com