

A REVIEW ON USING DIFFERENT TYPES OF CULTIVARS TO PRODUCE GREEN FODDER UNDER HYDROPONIC SYSTEM AND TO INCREASE THE EFFICIENCY OF MILK

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ABSTRACT: Green fodder feeding to livestock ensures to increase the milk production efficiency. It gives an effective solution to produce green fodder in different regions of the world. While compare to conventional green fodder hydroponic fodder is best to produce and the milk production gets increased. Hydroponics is a technology to grow plants without soil at desired temperature and humidity. Through hydroponics it is easy to produce green fodder like maize, ragi, bajra, cowpea, horse gram seeds and is suitable to grow. Leguminous crops grow well and it gives very high yield than the cereal crops. From 1kg of seeds the green fodder can be increased for about 15-20kg through hydroponic system. All the nutrients like crude protein, fiber, vitamins and minerals gets increased in hydroponic fodder. This provides them with a low cost, high yield, sustainable source of fodder to increase the milk production. Where conventional green fodder cannot grow in hydroponic technique and that can be produced by the farmers to feed for their dairy animals. The dry matter get loosed based upon the grain type and duration of fodder growth. Implementation of about 10-15kg fresh fodder was fed to the cow it increases 25-30% of milk gets increased by digesting all the nutrients.

Keywords: Hydroponic Fodder, Conventional Fodder, Milk Yield, Nutrient Composition.

INTRODUCTION

Green fodder is the natural diet for livestock. Due to many reasons, green production has been facing a serious crisis and so the livestock productivity. Many of the livestock farmers are switching to hydroponic production from conventional production methods, are very highly nutritious, provide sustainable fodder production and conserve water. (Jemimahe et al., 2018) Through this method it has more benefits to produce the green fodder. The main role to produce the green fodder is it improves the fat percentage in milk and helps in synthesis of vitamin A.(Naik et al., 2014) The hydroponic technology has been analyzed for various crops like ragi, bajra, maize, sorghum, for producing high quality of nutritious green fodder for dairy animals. The green fodder can be grown in seven days of time for optimum growth. (Abu Omar et al., 2012) Through hydroponics the green fodder consists of grains, roots, stem and leaves and conventional fodder consists of only stem and leaves. (Al-Karaki 2011) It consumes 98% less water than conventional method and the used water can be recycled. Fodder is grown completely natural without the use of any pesticides. Nutritious fodder are highly edible and also rich in protein (10-17%). (El-Morsy et al., 2013)

NUTRITIVE VALUE OF DIFFERENT CULTIVARS UNDER HYDROPONIC SYSTEM:

The hydroponic fodder was grown from various cultivars it gives more nutrient supply to increase the milk production. Through sprouting process the protein gets increased in producing the hydroponic fodder. (Ramachandra Ramteke et al., 2019) Grains usually contains around 90-95% protein in hydroponic fodder. When the grains were sprouted it increases the protein, enzyme activity, crude fat, crude fiber and certain minerals and protein.(Shewry et al., 1995)Hydroponic fodder are the rich source of anti-oxidant in the form of β -carotene, vitamin C and minerals like selenium and zinc. (Dung et al., 2010)

S.NO	Different cultivars	Parameters	Nutritive value of Hydroponics fodder
1.	Ragi	Nitrogen	8.5%
2.	Bajra	Phosphorous	0.89%
3.	Maize	Crude Protein	15.53%
4.	Sorghum	Milk Yield	7.09%

EFFECT OF INTAKE ON DIFFERENT CULTIVARS:

The intake of different cultivars plays an important role to supply the nutrients effectively. During germination process, enzymes are produced which improves the digestion and absorption of nutrients. (Al-Hashmi 2008) The digestibility coefficients of all nutrients were significantly higher by producing the hydroponics fodder. The germinated seeds are embedded in the root system are also consumed along with shoots and the nutrients are not degraded. (Taparauskeine 2015) The main advantages by the farmers were increase in fat and solid non-fat content of the milk were improved in the dairy animals. The digestibility of nutrients was increased by increasing the level of sprouted cultivars. (Buston et al., 2002) While compared to other level the nutrient digestibility is better to produce the hydroponic green fodder. These result revealed that feeding hydroponic fodder improves the digestibility of most nutrients. (Islam et al., 2016)

EFFECT ON MILK YIELD AND COMPOSITION USING DIFFERENT CULTIVARS:

The quality and quantity of milk production can be improved the hydroponics green fodder. (Abd Rahim et al. 2015)The composition of milk yield can be increased due to feeding the hydroponics fodder to lactating cows. During sprouting process the nutrient quality of hydroponics fodder improvement was increased. (Adjlane et al., 2016)The hydroponic sprouts contain more nutrients and it also helps to improve the livestock. After incorporating the hydroponics green fodder the weight of the animals get increased. (Emam, 2016) By feeding the hydroponics green fodder it will not cause any reproductive problems. The study indicates that hasa positive impact on producing the green fodder through hydroponics technology. (Chung et al., 1989)

CONCLUSION:

Through hydroponic technology we can produce the green fodder easily with a low cost. By growing different grains through hydroponics technology the milk production gets increased. The fresh green has been produced from grains without soil. Due to climatic change and less availability of land for producing hydroponic fodder it is an effective technology for sustainable livestock production in different agro climatic regions of India. The green fodder grows successfully in any situations. Hydroponics green fodder is more nutritious than conventional green fodder. The fodder has been fed to the dairy animals it secretes the milk in the range of about 50-70% efficiency of yield. This technology provides quality of milk products and help our economy. The main advantages of soil-less cultivation is the much higher crop yields. The usefulness and application of the results from this experiment it will not cause any pollution and the quality of green fodder will be very high and it will not affect the growth rate of plants.

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