

IMPACT OF FEEDING LOW COST DEVICES FOR HYDROPONICS FODDER PRODUCTION FOR DAIRY ANIMAL OF OSMANABAD DISTRICT IN MAHARASHTRA

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Abstract: The increase in the livestock population along with the intensive rearing system has resulted in increased demands for feeds and fodder in the country. Feed scarcity has been the major limiting factor in improving livestock productivity. With the very limited land allocation (about 5 % of the gross cropped area) for fodder cultivation, water scarcity and frequent drought-like conditions in Osmanabad district of Maharashtra, the production of sufficient fodder to meet the requirement of the huge livestock population is a big challenge. In this situation, hydroponic technology is emerging as an alternative to grow fodder for farm animals. Hydroponics fodder can be grown in low cost greenhouses with locally available of home-grown grains. Production of hydroponics fodder in low cost greenhouses is an effective solution for fodder scarcity and is a very promising technology for sustainable livestock production in different regions of India.

Introduction: The increase in the livestock population along with the intensive rearing system has resulted in increased demands for feeds and fodder in the country. Feed scarcity has been the major limiting factor in improving livestock productivity. With the very limited land allocation (about 5 % of the gross cropped area) for fodder cultivation, water scarcity and frequent drought-like conditions in Osmanabad district of Maharashtra, the production of sufficient fodder to meet the requirement of the huge livestock population is a big challenge. In this situation, hydroponic technology is emerging as an alternative to grow fodder for farm animals. Hydroponics fodder can be grown in low cost greenhouses with locally available of home-grown grains. Production of hydroponics fodder in low cost greenhouses is an effective solution for fodder scarcity and is a very promising technology for sustainable livestock production in different regions of India.

Methodology : An assessment was conducted for last two years in Osmanabad district of Maharashtra to see the efficiency of hydroponics green Fodder for Cross bred Cows. The technology is assessed by KVK, Tuljapur with treatment T₁ – Farmers practice, Green Fodder 7 kg + 3 kg Dry fodder + 4 kg concentrates. T₂ – Technology assess 30 kg Hydroponic Fodder + 3 kg

Dry fodder + 4 kg concentrates. Ten farmers from of Osmanabad district were selected for assessment.

Hydroponics Fodder Production: The mechanism of hydroponics fodder production is that water soaked seed of the fodder crops are kept on trays and allowed to germinate (sprout) inside a greenhouse of a short duration of about 7 days. Inside the greenhouse the sprouted grains are irrigated by sprinklers of fogging. The use of nutrient solution in place of fresh water is not mandatory as the nutrient content of the seeds is enough to fuel the growth of the fodder plants for short duration. Both seeds and device or structure are important for successful production of hydroponics fodder.

Devices For Hydroponics Fodder Production: The choice of structure or device generally termed as greenhouse here on is an important factor as it provides an ideal climate for the proper growth or sprouting of the fodder plant. A greenhouse is a framed of inflated structure covered with a transparent or translucent material in which the crops can be grown under the conditions at least partially controlled environment and is large enough to permit a person to work within it to carry our cultural operations.

Result and Discussion: The study of was conducted in scarcity zone of Osmanabad district

Table No. 1

| Sr No. | Treatment | Average milk production | CB Ratio |
|--------|---|-------------------------|----------|
| 1 | T ₁ – Farmers practice, Green Fodder 7 kg + 3 kg Dry fodder + 4 kg concentrates. | 6.6 | 1.7:1 |
| 2 | T ₂ – Technology assess 30 kg Hydroponic Fodder + 3 kg Dry fodder + 4 kg concentrates. | 8.1 | 2.3:1 |

Table No. 2

| Sr No. | Year | Average milk production T ₁ (Lit./day) | Average milk production of assessment T ₂ (Lit./day) | Average milk production |
|--------|---------|---|---|-------------------------|
| 1 | 2013-14 | 6.7 | 8.3 | 1.6 lit |
| 2 | 2014-15 | 6.5 | 7.9 | 1.4 lit |

It was observed from the data of 10 farmers that milk production yield was increased from 0.5 to 1.5 lit. per animal per day with increase in the net profit by Rs.30-55/- per animal per day due to treatment T₂ over T₁. Hydroponics fodder is more nutritious than the conventional maize (Nike et al, 2012). The Hydroponics fodder have good palatability. The germinated seed embedded in the root system are also concerned along with the shoots on the plants, so there is no nutrient wasting. There are reports on increase in milky yield of 7.8 % and 9.3 %

.(Anonymous, 2012) it was observed that the farmer can be benefited by Hydroponic feeding with C: B ratio 2.3:1.

Conclusions: Hydroponics fodder can be grown in low cost greenhouses with locally available or home-grown grains, production of hydroponics fodder in low cost greenhouses is an effective solution for fodder scarcity and is a very promising technology for sustainable livestock production in Osmanabad district.

References:

1. Contacted through email for references.
2. ICAR Website.



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