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## SCIENTIFIC CULTIVATION OF FODDER MAIZE FOR ANIMAL HUSBANDRY

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**M**aize fodder can be grown easily in Indian conditions. Maize is one of the most nutritious non-legume green fodders (Chaudhary *et al.*, 2014). It has high nutritive value, which provides energy and protein to animals. Non-availability of constant quality fodder around the year aggravates the limitations of sustainable dairy farming (Naik *et al.*, 2015). Green fodder is an essential component of the dairy ration; otherwise, the productive and reproductive performance of the dairy animals is adversely affected (Naik *et al.*, 2014). Maize is one of the most suitable crops, having wide adaptability under varying agroclimatic conditions (Sarmini & Premaratne, 2017). Fodder maize contains around 18 to 19 per cent dry matter and around 17 per cent of organic matter. It contains up to 15 per cent of protein and 3.5 per cent to 4.5 per cent of fat. The carbohydrate content in maize fodder is around 15 per cent in green conditions and up to 80 per cent on a dry matter basis. On a dry matter basis, maize fodder contains around 0.35 and 0.14 per cent of calcium and phosphorus, respectively. It suggests that the maize fodder crop has all the characteristics of a good fodder crop, which enhances the milk production and other physiological function of livestock. Maize is an ideal fodder crop because of its quick-growing nature, palatability and excellent quality without any toxicant at any stage of crop growth (Kumar., 2017). A scientific package of practice for fodder maize crops can ensure higher productivity. Loam-to-clay loam soil is suitable for the cultivation of fodder maize. The crop can endure a small level of acidity or alkalinity. The field should have a good drainage facility for the cultivation of maize crops. The crop can be grown throughout the year, except for the extreme winter season.

## Cultivation Practices of Fodder Maize for Better Productivity

If maize fodder is cultivated scientifically, then high productivity of the crop can be expected. The detailed package of practices for the scientific cultivation of fodder maize is given in the following paragraphs:

**1. Seed requirement and seed treatment:** For the cultivation of maize fodder in one hectare of land, 75 to 80 kg of maize seed is required for sowing seed through the broadcasting method and 55 to 60 kg of seed for line sowing. African Tall, J-1006, Vijay composite are some of the important varieties of maize fodder crop. For seed treatment, 2 gm Thiram 75% or 4 gm Carbendazim 50% per kg of seed is required. *Trichoderma viridae* or *Trichoderma harzianum* 2% powder can also be used as bio-pesticide for seed treatment.

**2. Application of fertiliser:** For per hectare land 150 quintals of farmyard manure, 75 kg urea and 180 kg Single Super Phosphate can be used as basal dose. Potash and zinc may be applied on the basis of requirement. Urea can be applied at the rate of 90 kg per hectare as a top dressing after 30 days of sowing.

**3. Irrigation:** Seed of maize fodder can be sown in the field with adequate moisture. Irrigation may be provided every 12 to 14 days, except in the rainy season when there is excessive availability of water. Standing water for more than six hours can severely damage the crop, hence good drainage facilities should be there for fodder crop production.

**4. Weeding operations:** After the sowing of maize seed, in the first-month, problem is less but after one month, a serious problem of weed infestation may be observed. In summer before sowing the crop 2 to 3 deep ploughing may be given. After three days of sowing seed, 10 to 15 gm Atrazine 50% weedicide may be sprayed in the field by dissolving it in 3 litres of water. Weeding can also be done after 30 to 40 days after sowing seeds.

**5. Disease management:** Among different diseases of maize fodder crops, the fungal disease is the most prevalent. If the seed is treated before sowing, then incidences of disease can be reduced. Apart from that, 3 to 4 gm Mancozeb 75% may be dissolved in per litre of water and may be applied in the field for control of the disease. Spraying Mancozeb 75% again after 10 days of the first spray can give good results.

**6. Pest management:** Several insect pests damage the yield potentiality of fodder maize crop. Some of the major insect pests of maize are spotted stem borer (*Chilo partellus*), Pink

stem borer (*Sesamia inferens*), Shoot fly (*Atherigona* spp.) and Fall Army Worm – (*Spodoptera frugiperda*). Spotted stem borer, Pink stem borer and Fall Army Worm generally attack the plant in the initial phase of growth and cause extensive damage within the initial 40 days of germination. These insects can be controlled by spraying 5 per cent neem oil (Azadirachtin) by dissolving at the rate of 1500 PPM in per litre of water. As the crops are grown for animal feeding, chemical pesticides may be avoided for controlling insect pests. In case of more than 10 percent infestation, Chlorantraniliprole 18.5 SC, Emamectin Bezoate 5% SG or Spinetoram 11.7% SC can be applied. The fodder can be harvested at least 30 days after the application of chemical insecticide.

**7. Harvesting:** The fodder maize can be harvested after 50 to 75 days after sowing with the emergence of the male flower to milk stage. Fodder should be cut into small pieces to feed to animals. The average yield of fodder maize is 250 to 350 quintals per hectare.

### Conclusion

For animal husbandry, feeding is the most important aspect. Animal feeding involves around 60 to 70 per cent of total farm expenditure. Maize is considered one of the best fodder crops for animal husbandry. The yield potentiality of fodder maize can be enhanced by following the proper package of practices. Maize fodder can provide enough energy, protein and other nutritional elements which can improve the productivity of livestock. Hence, the cultivation of maize fodder crops scientifically can increase the economic return of animal farms.

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