



Effect of irrigation scheduling and rate of nitrogen levels on yield and quality of summer fodder maize

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Live stock rearing is a very important part of our rural economy not only for animal products, but also for drought power. India has the largest live stock population of 520 million head which is about 15 per cent of the world's livestock. Where as, India has only two per cent of the world's geographical area. This has put tremendous pressure on the availability of feed and fodder to livestock due to competing demands for food crops to meet the requirements ever increasing the population. The present feed and fodder resources of the country can meet only 47 per cent of the requirements with a vast deficit of 61 and 22 per cent of green and dry fodder, respectively.

Availability of green forage to the animals is the key to success of dairy enterprise and it is difficult to maintain the health and milk production of the live stock without supply of the green fodder. Fodder maize is one of the most important dual purpose crop grown through out year, if irrigation facilities are available. It is succulent, sweet, palatable, nutritious and free from toxicant and it can be safely fed at any stage of crop growth. It is also useful crop for making silage. Nitrogen requirements play a vital role in quantitative, as well as qualitative improvements in the productivity of fodder. Therefore, present experiment was planned to evaluate the effect of irrigation scheduling and rate of nitrogen levels on yield and quality of summer fodder maize.

An experiment on fodder maize was conducted at Collage Agronomy Farm, Anand Agricultural University,

Anand during Summer-07. Twelve treatments comprised of three levels of irrigation (I_1 : Irrigation at 0.6 IW: CPE ratio, I_2 : Irrigation at 0.8 IW: CPE ratio, I_3 : Irrigation at 1.0 IW: CPE ratio) and four levels of nitrogen (N_1 : 80 kg N/ha, N_2 : 100 kg N/ha, N_3 : 120 kg N/ha, N_4 : 140 kg N/ha) were tested in spilt plot design with four replications. The soil of experimental field was loamy sand in texture having food drainage capacity. It was low in organic matter content and available nitrogen, medium in available phosphorus and high in available potash with pH 7.6 and EC 0.20 dsm⁻¹. African tall variety of fodder maize was selected for sowing at a distance of 45 cm between rows during the last week of February. Except the irrigation scheduling and nitrogen management's practices, whole recommendation package of practices was followed to raise the fodder maize.

Plant population per meter row length and leaf: stem ratio of forage maize were not influenced significantly by irrigation levels. However, numerically both parameters recorded maximum under the treatment of irrigating the fodder maize at 1.0 IW: CPE ratio (I_3). Plant height (150.1 cm) at harvest was observed significantly highest under the I_3 irrigation level (1.0 IW: CPE ratio) as compared to I_1 irrigation level, which remained at par with I_2 irrigation level (0.8 IW: CPE ratio). The increase in plant height at harvest under I_3 and I_2 irrigation levels was 9.88 and 7.47 per cent over I_1 irrigation level, respectively. This might be due the fact that increase in total quantity of water applied maintained moisture continuously in root zone area of plant. Therefore, it provides congenial condition for favourable growth in term of cell division and increase in cell size, which resulted in expansion of plant in term of height. Joon *et al.* (1988) also found similar types of results.

Green forage and dry matter yield of fodder maize

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