



# KrishiKosh (कृषिकोश)

(/) An Institutional Repository of Indian National Agricultural Research System



(/)

[Advanced Search \(/advanced-search\)](/advanced-search)

[Krishikosh \(/\)](#) / [Birsa Agricultural University, Ranchi \(/handle/1/93542\)](#) / [Thesis \(/handle/1/93550\)](#)

Please use this identifier to cite or link to this item: <http://krishikosh.egranth.ac.in/handle/1/5810019286>

Authors: [Raj, Akansha \(/browse?type=author&value=Raj%2CAkansha\)](/browse?type=author&value=Raj%2CAkansha)

Advisor: [Singh, C.S. \(/browse?type=author&value=Singh%2C.C.S.\)](/browse?type=author&value=Singh%2C.C.S.)

Title: SITE SPECIFIC NUTRIENT MANAGEMENT IN HYBRID MAIZE.

Publisher: Birsa Agricultural University, Kanke, Ranchi, Jharkhand

Language: en\_US

Type: Thesis

Pages: 90

Agrotags: null

Keywords: SITE SPECIFIC NUTRIENT MANAGEMENT IN HYBRID MAIZE.

**Abstract:** Maize is considered as the third most important food crop among the cereals and contributes to nearly 9% of the national food basket. Since the inception of Green Revolution there has been a race for increasing food grain (mainly cereals) production using chemical fertilizers in India. However, cereal production in the country increased only five fold, while fertilizer consumption increased 322 times from 1950–51 to 2007–08 periods, implying very low fertilizer use efficiency. Therefore, the goal of Indian agriculture has to be increase food-grain production with the minimum and efficient use of chemical fertilizers. In this context, Site-Specific Nutrient Management (SSNM) approach is one such option which focuses on balanced and crop need-based nutrient application. Almost all the maize hybrids respond positively to nutrient management practices. However, there existed a wide scale variability among maize hybrids in response to nutrient management practices. Site-Specific Nutrient Management (SSNM) ensures balanced precision nutrition application based on the nutrient supplying capacity of the soil and nutrient requirement of a particular crop to produce a unit quantity of yield or set yield target. Hence, there is a need to evaluate maize hybrids under site specific nutrient management to find out the suitable dose of fertilizer needed by the particular hybrid. Keeping this in view, an experiment entitled “Site specific nutrient management in hybrid maize” was carried out in University Research farm during kharif season of 2014 in sandy loam soil of pH (6.13), low organic carbon (0.42%), available nitrogen (242.7 kg/ha), available phosphorus (18.72 kg/ha) and available potassium (164.8 kg/ha). The experiment was laid out in split plot design in 3 replications with 6 hybrids of maize (PMH-1, PMH-3, CMH 08-350, CMH 08-287, CMH 08-292 and HQPM- 1) in main plot and 3 nutrient management practices (recommended dose of fertilizer, site specific nutrient management, and farmer fertilizer practice) in subplot. Result revealed that site specific nutrient management produced higher dry matter (2358.28 g/m<sup>2</sup>), number of cobs/ha (61481), cob length (19.93 cm), cob girth (15.02 cm), number of grain/cob (545.80) and 1000 grain weight (346.68 g) resulting in higher cob (91.54 q/ha) grain (77.45 kg/ha), stover (125.56 q/ha) yield, energy output by grain (113860 MJ/ha), net energy return by grain (98761 MJ), net return (67218 /ha ) and benefit:cost ratio (2.33) of maize . The site specific nutrient management also removes higher nitrogen (177.25 kg/ha), phosphorus (31.74 kg/ha) and potassium (164.21 kg/ha) than recommended dose of fertilizer and farmer fertilizer practice. Among the hybrids, maize cultivar CMH 08-350 was found superior over the other hybrids as it produced higher grain (71.40 q/ha), stover (117.34 q/ha) yield, energy output by grain (104958 MJ), net energy return by grain (92060 MJ), energy use efficiency (8.01), energy productivity (544.93 g/MJ), net return (62067 /ha), benefit:cost ratio (2.29) nitrogen uptake (159.33 kg/ha), phosphorus uptake (28.76 kg/ha) and potassium uptake (146.86 kg/ha). Conclusions: □ Site specific nutrient management (170:67:86 kg NPK/ha) is found to be the most suitable nutrient management technique for obtaining higher grain and stover yield with higher net return and B:C ratio of maize at Kanke, Ranchi region of Jharkhand. □ CMH 08-350 was the most suitable maize hybrid for maize cultivation in Jharkhand region.

**Description:** SITE SPECIFIC NUTRIENT MANAGEMENT IN HYBRID MAIZE.

**Subject:** Agronomy

**Theme:** SITE SPECIFIC NUTRIENT MANAGEMENT IN HYBRID MAIZE.

**These Type:** M.Sc

**Issue Date:** 2016

**Appears in Collections:** Thesis (/handle/1/93550)

Files in This Item:

File	Description	Size	Format
1579 Ms. Akansha Raj.pdf		4.23 MB	Adobe PDF

[View/Open \(/displaybitstream?handle=1/5810019286\)](/displaybitstream?handle=1/5810019286)

[Show full item record \(/handle/1/5810019286?mode=full\)](/handle/1/5810019286?mode=full)

 [\(/handle/1/5810019286/statistics\)](/handle/1/5810019286/statistics)

Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.