



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/1/5810096265>

Authors: Kumari, Sima (/browse?type=author&value=Kumari%2C+Sima)

Advisor: Upasani, R.R. (/browse?type=author&value=Upasani%2C+R.R.)

Title: WEED MANAGEMENT IN CONSERVATION AGRICULTURE OF MAIZE-WHEAT CROPPING SYSTEM

Publisher: Birsa Agricultural University, Ranchi, Jharkhand-6

Language: en_US

Type: Thesis

Pages: 178

Agrotags: null

Keywords: WEED MANAGEMENT IN CONSERVATION AGRICULTURE OF MAIZE-WHEAT CROPPING SYSTEM

Abstract: Maize and wheat are grown generally by tilling the field thoroughly till proper tilth is attained. Tillage practices contribute greatly to the labour cost resulting to lower economic returns. In addition to it, intensive tillage system results to a decrease in soil organic matter content and soil biodiversity. A resource conservation technology has proved to produce more at low cost, to improve soil health and promotes timely planting of winter crops. Weed management is an important aspect in maize and wheat crop as weeds cause yield loss to the extent of 28-100% in maize and 20-40% in wheat. Hence, keeping this in view an experiment was conducted at Birsa Agricultural University, Ranchi, Jharkhand during 2015-16 and 2016-17 with objectives to study the effect of tillage sequences and weed control methods on weed dynamics, productivity and economics, soil health of maize, wheat and system as whole. The experiment was laid out in strip plot design with five tillage sequences in vertical plots, viz. conventional (CT – CT), conventional – zero (CT – ZT), zero – zero (ZT – ZT), zero – zero with crop residue (ZT – ZT+R) and zero tillage along with crop residues in both the seasons (ZT+R – ZT+R) while three weed control methods in horizontal plots viz, recommended herbicides in maize (atrazine @ 1 kg/ha pre-emergence) and wheat (isoproturon @ 0.75 kg/ha +2,4-D @ 0.5 kg/ha post emergence), IWM in maize (pendimethalin @1 kg/ha + intercrop black gram) and in wheat (isoproturon @ 0.75 kg/ha +2,4-D @ 0.5 kg/ha post emergence + mechanical weeding at 40 DAS) and weedy check. Experimental soil was sandy-loam in texture having pH 5.5, organic carbon 4.2 g/kg soil, available N 240 kg/ha, available P 19.00 kg/ha and available K 187 kg/ha. Result revealed that during kharif maize grown under CT – CT tillage similar to ZT+R – ZT+R was most effective in reducing weed dry weight in maize at 30 and 60 DAS compared to maximum observed under ZT – ZT, thereby recorded maximum weed control efficiency, increased growth parameters and yield attributes thereby resulted in higher grain yield (38.08 q/ha), net return (30,816 `/ha) and B:C ratio(1.43) compared to minimum under ZT-ZT tillage sequence. In rabi season CT – CT similar to ZT+R – ZT+R sequence recorded reduced total weed dry weight consequently it recorded maximum wheat plant growth parameters, yield attributes resulting maximum grain (34.61 q/ha) and straw(46.29 q/ha) yield, net return (30252 `/ha) and B:C ratio(1.22) and minimum was observed under ZT-ZT tillage sequence. Application of IWM in maize (pendimethalin @1 kg/ha + intercrop black gram) similar to recommended herbicide (atrazine @ 1 kg/ha pre-emergence) was found to be most effective in reducing weed dry weight there by recorded maximum weed control efficiency. Also, it recorded maximum growth parameters, yield attributes resulting higher grain yield (40.35 q/ha), net return (28,687 `/ha) and B:C ratio(1.07). IWM (isoproturon @ 0.75 @ kg/ha +2,4-D @ 0.5 kg/ha post emergence + mechanical weeding at 40 DAS) similar to recommended herbicide (isoproturon @ 0.75 kg/ha +2,4-D @ 0.5 kg/ha post emergence) was found to be most effective in reducing weed dry weight in wheat at 30 and 60 DAS compared to maximum observed under weedy plot. Maximum weed control efficiency, increased growth parameters, yield attributes higher grain (35.71 q/ha) and straw (47.19 q/ha) yield, net return (30981 `/ha) and B:C ratio(1.20) were recorded in IWM. In maize-wheat cropping system CT – CT along with integrated weed management recorded maximum maize equivalent yield (103.81 q/ha) and net return (89445 `/ha) followed by zero tillage with residue and integrated weed management i.e. 96.44 q/ha and 63637 `/ha respectively.

Description: WEED MANAGEMENT IN CONSERVATION AGRICULTURE OF MAIZE-WHEAT CROPPING SYSTEM

Subject: Agronomy

Theme: WEED MANAGEMENT IN CONSERVATION AGRICULTURE OF MAIZE-WHEAT CROPPING SYSTEM

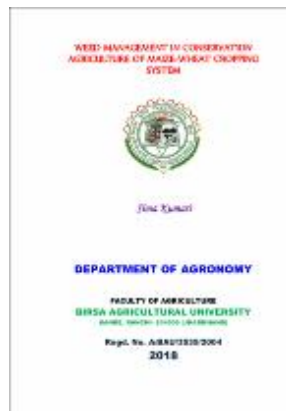
These Type: Ph.D

Issue Date: 2018

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

Files in This Item:

File	Description	Size	Format
1727 Sima Kumari.pdf		7.1 MB	Adobe PDF



[View/Open \(/displaybitstream?handle=1/5810096265\)](/displaybitstream?handle=1/5810096265)

[Show full item record \(/handle/1/5810096265?mode=full\)](/handle/1/5810096265?mode=full)

[📊 \(/handle/1/5810096265/statistics\)](/handle/1/5810096265/statistics)

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