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The Impact of Farmyard Manure, Chemical Fertilizers and Combination on Chilly Seed Germination in Manawar Dist. Dhar (M.P.), India

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ABSTRACT

The aim of gift paper is to form a quick compilation of the effect of Farmyard manure, chemical fertilizers and combination on cold Seed germination in Manawar dist. Dhar (M.P.), India. Chilli (*Capsicum annuum* L.) is a warm tasting tropical berry belongs to family Solanaceae having chromosome variety $2n=24$ & self pollinated crop. The present observes is based totally on lab experiment in Manawar area at some point of 2018-2020. In chillies seed germination percentages in their combination germination chances are 96 % are recorded and CF is 95 % along with FYM is 90 % are recorded.

Key words: Chilly, Seed germination, Farmyard manure, chemical fertilizers.

Introduction

Chilli is taken into consideration as one of the industrial spice crops. it is the maximum widely used spice, named as surprise spice (Geetha & Selvarani 2017). Most of the agricultural populations dwelling rely on crops. Manawar is bestowed with specific variety of cold crop. The cold crop performs an essential function and having had twin importance in human existence. It's a ways used as medicine as well as meals. It is good supply of diet C and Zinc.

Chillies have also observed many nutritional components e.g. vitamins, A, vitamins C, beta carotene, Ca, Fe, and potassium. Capsicum also contains magnesium, sulphur, phosphorus, B-complex vitamins, and sodium. it is utilized in diverse indigenous systems which includes Siddha, Ayurveda, Unani to deal with specific illnesses such as dyspepsia, constipation, flatulence, arthritis, gangrene, catarrhal suffering, menstrual cramps, as in colds, cough, asthma. Chilli (*Capsicum annuum* L.) is a hot tasting tropical berry belongs to circle of relatives Solanaceae having chromosome variety $2n=24$ & self pollinated crop. Chilli has its originated in Mexico with Peru, maintaining the best cultivated capsicum range. The major Chilli developing international locations are India, Mexico, Thailand, U.S., Malaysia, Vietnam, Shri lanka, Pakistan, & Ethiopia. In India vital chili generating states are Andhra Pradesh, Telangana, Madhya Pradesh, Karnataka and West Bengal. it's miles cultivated in almost all of the tropical countries of the world. it's miles classified as Eukaryotes > Plantae > Tracheophyta > Magnoliopsida > Solanales > Solanaceae > Capsicum annuum L. some research is done on Capsicum annuum L.(chilli) via Singh et. al. 2014, Mehraj et. al. 2014, Rao et. al. 2015, Khan et. al. 2017, Mehta 2017, Liliana et.al. 2018.

Taxonomy

Annual shrub, up to 2 m. Leaves simple, alternate, elliptic -lanceolate, entire, wrinkled. Flowers small, white, in clusters. Fruits many seeded, berries, long, cylindrical, ovoid, obtuse red when ripe smooth, shiny, round, discoid.

Study area

The experimental site Manawar is located at 22.23° N and 75.08° E. It has an average elevation of 180 meters (590 feet). The climate of the locality is generally dry except inside the monsoon season. The soil texture is exclusive in diverse parts of Dhar district. Black sandy and granite soil is located on the slopes of Vindhyan scarps. Moist soil is present over the deeper alluvial mantle and sandy loam.

Methodology:

The existing observes is based on filed as well as lab experiment in Manawar region for the duration of 2018-2020. Collections the seed is collated from authorized centers and treated it. Plant series is finished by using up-to-the-minute practice. A chillies variety was used as a test crop. The range matures in 80-120 days (medium), has a medium plant peak. It's far cultivated in have a look at location in both kharif and Rabi crop seasons. Sowing of chillies for the kharif crop season takes place between July and august while for the Rabi season. Chili is sown over October and November. The experiment was specified in a randomized whole block design in a factorial arrangement and replicated three times in keeping with remedy. Growth parameters and Quality characters are studied.

Fertilizer Material

Urea (46% N), Di-ammonium phosphate (DAP) (46% P₂O₅ and 18% N), have been used as inorganic N, P, K (Nitrogen, Phosphorus, Potassium) sources. Farmacyard manure (FYM) became used as an organic fertilizer. In which chemical fertilizer used for the studies work had been of brand Indian farmers fertilizer co-operative limited (IFFCO) that is introduced from neighborhood market of Dhar district of Madhya Pradesh.

Result and discussion

The data were recorded on various aspects of growth, yield and quality of chilli. In the course of experiment under confined farming was conducted at investigational pasture department of botany, Govt. Madhav Science College, Ujjain (M.P.), India. Chilli is cultivated in kharif and Rabi crop season takes place between July and august while for Rabi. Data obtained in the present investigation was analyzed statistically and Results of each character are presented in this chapter under suitable heads with proper interpretation.

Seed Germination

The seeds of chilli and tomato were selected for germination test. Healthy seeds were surface sterilized with 0.1% HgCl₂ for 5 min and then were washed thoroughly with distil water. Three replicates of 75 seeds were used to record seed germination. Seeds of each study area were cleaned and three replicates (each of 25 seeds) of each species were soaked in distilled water for 24 hours. The soaked seeds were placed on moist Whatman filter paper no. 1 in Petridis. A small quantity of distilled water was added regularly to keep filter paper moist. The petridishes containing seeds for germination were placed in an incubator (20-27 °C) Number of germinated seeds (criterion: emergence of plumule and radical) was noted daily for next 15 days. Mean germination percentage was calculated using following formula:

Mean Germination % = Total no. of seed germinated / Total no. of seeds in all replicates x 100

The activation of a seed from its quiescent state to a state of active growth leading to a series of events resulting in its development into a seedling is known as germination. Increase in seed germination was observed in all study species; however maximum increase was noted in seeds obtained from plants with their combination than in CF after that FYM are observed. Bade *et. al.* 2017 done Area test become conducted to evaluate the impact of natural manures and bio-fertilizers on the increase, yield and exceptional of chilli.

In chillies seed germination percentages in their combination germination percentages are 96 % are recorded and CF is 95% along with FYM is 90 % are recorded (Table1).

Table-1: Seed germination Percentage with FYM, CF & combinations (FYM & CF)

Species	Year	FYM	CF	FYM & CF
Chillies	2018-2019	89.5	93.4	94.3
	2019-2020	91.3	96.1	97.7
	AV ±	90.4±1.2	95.1±2.4	96.0±2.4

AV=Average of seeds, ± =standard deviation,

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