

Farm Mechanization for Production

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FOREWORD

Pulses play an important role in human diet in the country by supplementing protein to vegetarians in daily diet. Though India has made a significant head way in increasing agricultural production in general, pulses have continued to evade solution. The per capita availability of pulses in India has been continuously decreasing, which reached from 65 g day⁻¹ in 1951-52 to 50 g day⁻¹ in 2014. Accordingly to nutritional standards it has to be at least 80 g. Therefore this trend needs to be addressed as early as possible for nutritional security. Pulses are mainly grown under rainfed condition therefore faced many abiotic and biotic stresses. Mechanization in pulses is negligible; it is still cultivated using family labour and animal power. Productivity of most of the pulses is stagnated at national level. Even enhancement of area under pulses is not encouraging, it merely increase from 24.23 million ha (TE 1963-63) to 24.31 million ha (TE 2013-14).

Varieties of pulses developed by NARS have potential of 20-25 q ha⁻¹. Thus there is a need to tap this potential by dissemination of improved production technologies along with need based farm mechanization in pulses based cropping system at national level. Looking to the importance of farm mechanization in pulses for efficient use of natural resources the workshop was organized at Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur on 2nd November 2017. In the workshop scientists across the country participated and discussed various issues for enhancing farm mechanization for production of pulses.

I personally congratulate the editorial team for their painstaking and sincere efforts in bringing out such a comprehensive book entitled "Farm Mechanization for Production of Pulse Crops". The content and recommendations emerged out of the deliberations and cited in the book would be very useful to policy makers, researchers and stakeholders for enhancing need based farm mechanization for cultivation of pulse crops in the country.

Date: 01-01-2018

(P.K. Bisen)

PREFACE

Farm mechanization is an important element for modernization of agriculture. Farm Productivity is positively correlated with the availability of farm power coupled with efficient farm implements and their judicious utilization. Agricultural mechanization enables efficient utilization of various inputs *viz.*, seed, fertilizer, plant protection measures and irrigation water. It helps in poverty alleviation by making farming an attractive enterprise. Over the ages, Indian farmers have mainly used human and animal power and traditional methods for cultivation. Traditional farming practices are time consuming and labour intensive with dependency on climate and nature. These practices often fail to utilize natural resources and seed inclusively. Use of mechanical power and new technologies speeds up agricultural operations by reducing dependency on labour and climate; ensures efficient management of costly inputs; and enhances agricultural productivity. Department of Agriculture and Cooperation is following multi-pronged strategy for promotion of farm mechanization. Over the years Indian farmers have been sensitized to use modern farm equipments and techniques. But, still farm mechanization is limited to cereal based cropping system only.

In order to understand how farm mechanization can be promoted in cultivation of pulses a workshop entitled *Farm mechanization for production of pulse crops* was jointly organized by Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur and Department of Agricultural Engineering, Bhopal on November 2, 2017 with financial support of the Government of Madhya Pradesh.

For enhancing farm mechanization, policy makers must develop both a foundation of mechanization and an understanding of the key elements critical to achieve it. The book provides a framework for achieving farm mechanization in pulses in a way that emphasizes the uniqueness of each group *i.e.*, farm machinery, agronomy and plant breeding with stakeholders engaged in implementation of various programmes at ground level.

The dynamics of farm mechanization in pulses is a challenging issue to address. This text emphasizes the necessary keys in building and operating farm mechanization in pulses to complete the task by research, sensitization and policy decision. The authors believe that the book will help in implementation of farm

mechanization in pulses which may be achieved with sensitization of farmers for adoption of recommendations, scientists to work on wide spectrum of researchable issues and policy makers to develop farmers friendly strong policy.

The essence of the book will help in doubling the farmers' income, reducing import of pulses and vanishing mal-nutrition from the country.

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