

2nd revised edition

Practical Manual on Basic **Agronomy** (with theory)



N. R. Das



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Practical Manual on BASIC AGRONOMY

(with theory)

2nd Revised Edition

Professor N.R. Das

M.Sc. (Ag.), Ph.D., D.W.P. (CIMMYT-MEXICO), FIBR (INDIA)

*Ex-Professor of Agronomy,
Bidhan Chandra Krishi Viswavidyalaya,
Mohanpur, Nadia, West Bengal*

Formerly,

Director of Research, Director of Farms and Head, Department of Agronomy;
Faculty of Agriculture, Wheat Agronomist and Officer-in-Charge, All-India Co-ordinated
Wheat Improvement Project (ICAR) and Research Agronomist,
Bidhan Chandra Krishi Viswavidyalaya, West Bengal



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*In memory of my teacher late
Professor A.T. Sanyal, Professor of
Agronomy, the then Kalyani University,
West Bengal who inspired me for the
field-work activities.*

— Author

PREFACE

There is a proverb, “*Practice makes a man perfect*”. From this proverb, it is obvious that confidence which is created out of regular practice anything, ultimately is very helpful for future life and this is true in case of agronomic practice also.

India is a vast country, having different ecosystems, with different plants, animals and human population. Under the prevailing situations, it is quite natural that most of the people of eastern India do not know anything about the plant of ‘*isophgol*’ (*Plantago ovata* Rosk, of *Plantaginaceae* family), though they use it as medicine; on the other hand, most of the people of the western parts of the country, do not know the fibre crop of ‘jute’ (*Corchorus olitorius/capsularis* L. under *Tiliaceae* family), though they use the jute bag/ sack/carpet etc. But students of agriculture in both the areas, should at least, to be acquainted with some of the information of both the plants, though it is not possible to look at them in their respective areas, due to different ecosystems.

The ‘*farm*’ where agronomy students do the practical class, is a holy place, and from there they can learn many many things which ultimately will be the assets in life. Therefore, agronomy students should visit the farm, of course, with the permission whenever they get time, besides their classes, to increase their knowledge in crops, soils, meteorological aspects or other management practices. Of course, for visiting farms, inquisitiveness or special interest is needed.

For creating such inquisitiveness, the ‘farm’ should be arranged in such a way, where office-buildings, threshing floors, equipments/tractors/tools sheds, crop museum, irrigation systems, godowns (for seeds and fertilizers), open laboratories, well laid-out fields, good neat and clean beautiful gardens, good pucca road/path, effective machineries, electricity etc. are available.

For good teaching or learning, a good ‘farm’ is essentially needed, with good knowledgeable and work-interested field staffs, along with the interested teachers.

Theoretical knowledge or the background information of the subject, is also required for practical work. With this in view, the present book, entitled, ‘**Practical Manual on Basic Agronomy**’, has been written in short, as a ‘practical text book’ in Agronomy subject, based on theoretical background, for thorough knowledge of that subject, after a long teaching experience in the universities. Practical classes, with lesson numbers have been fitted,

immediately after theoretical discussions, in different sub-chapters in Chapters, on the same studies. The lesson, has been divided into '*Introduction*', '*Objective*', '*Materials required*' and '*Procedure*'. In some cases, 'assignments' have also been given.

There are 14 chapters in this book and these are: 1. Introduction, 2. Preliminary knowledge for Agronomy studies, 3. Climate and its influence on crop production, 4. Soil environment and its modification for crop production, 5. Tillage and crop production, 6. Seeds, sowing, stand establishment and crop-classification, 7. Manures and fertilizers for crop production, 8. Irrigation for crops and cropping systems, 9. Weeds and weed-management for crop production, 10. Soil moisture management under rainfed conditions, 11. Major crops cultivation (in short), 12. Cropping systems, 13. Harvesting of crops, crop-yields and their storage and 14. Vital information for practical approach. Besides these, there are 170 lessons in it.

For all the students of 4-year-degree courses in all the agricultural universities of the country, this book will be needed. This will be very helpful for other students of agricultural training centres/research institutes of different states of the country also. In different 'Krishi Vignan Kendras (KVK)' of ICAR, this type of book will be required for their training programmes. Even the educated farmers will also be benefited for their upliftment of crop production programmes, with this book.

I thank those persons, who have requested me to, write such a new type of book, for the development of 'teaching-in-agriculture' of the country. At the end, I am thankful to my son Partha, daughter Aparna and wife Arati who have helped me directly or indirectly, in writing this book.

N.R. Das

Sabuj Niketan,
Kalyani, West Bengal

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| Lessons 156 and 157. | Visit the godown, cold storage, and silage pits, for observing the storage of produce of (i) cereals, (ii) pulses, (iii) oilseeds, (iv) sugars, and (v) fibres and (vi) tubers (potato) and take the visual observations/ records. | 293 |
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Management of individual-plot with specific crop, allotted to each student. under irrigated condition, in lessons 159 to 168

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