Training Report

Title: Training for Enumerators for data collection and Soil Sampling in Soil Baseline Study for Better Cotton

July 09, 2024

Organized by:

Agri-Tech Solutions

Location:

Business Incubation and Agriculture Entrepreneurship Centre (BIAEC),

Muhammad Nawaz Sharif University of Agriculture, Multan

Contents

Acknowledgment

We extend our sincere gratitude to all participants whose contributions made this soil baseline project enumerators training program possible. Special thanks to our dedicated trainers and resource persons for their expertise and commitment in sharing invaluable knowledge. We also acknowledge the support and collaboration of Business Incubation and Agriculture Entrepreneurship Centre (BIAEC), MNS-University of Agriculture for hosting and facilitating this training initiative. Our heartfelt appreciation goes to all participants whose active engagement and feedback enriched the learning experience. Thank you all for your contributions towards promoting soil sample collections form different districts of Punjab and Sindh for soil fertility assessment.

Introduction

Soil is the foundation for plant growth and is a critical natural resource. It is composed of a complex mixture of minerals, organic matter, living organisms, air, and water that together support the growth of diverse plant life. The overall health and productivity of soil, known as soil fertility, is determined by the physical, chemical, and biological properties of the soil.

Soil fertility refers to the ability of the soil to provide the necessary nutrients, water, oxygen, and environmental conditions for plants to thrive. Factors like soil texture, pH, organic matter content, nutrient levels, and the presence of beneficial microorganisms all contribute to soil fertility. Maintaining optimal soil fertility is essential for sustaining healthy plant growth and high agricultural yields.

However, soil health can be threatened by various issues, including erosion, nutrient depletion, contamination, compaction, and salinization. These problems can degrade soil quality over time and reduce its fertility. Addressing soil health challenges requires a comprehensive understanding of the specific soil conditions and factors affecting the land.

Collecting representative soil samples is a crucial first step in evaluating soil fertility and identifying any potential problems. Proper soil sampling techniques, such as using standardized sampling patterns, collecting samples from multiple depths, and analyzed them in laboratory, provide the necessary data to develop effective soil management strategies. The insights gained from soil sample analysis can guide decisions about fertilizer applications, tillage practices, cover cropping, and other interventions to optimize soil productivity.

By understanding the fundamental properties of soil, assessing soil fertility, and implementing appropriate soil sampling protocols, landowners, farmers, and land managers can make informed decisions to maintain and improve the long-term health and sustainability of this vital natural resource.

Comprehensive Approach to Soil Baseline Study

An effective soil sample collection strategy requires a comprehensive approach involving knowledge, regulation, collaboration and capacity building of field enumerators to collect soil samples form fields. Training programs, such as the one recently conducted, play a pivotal role in raising awareness and building capacity among field enumerators.

On July 09, 2024, a comprehensive training session was successfully conducted on “Soil Baseline Study in Better Cotton Project Pakistan” at Business Incubation and Agriculture Entrepreneurship Centre
(BIAEC),

Muhammad Nawaz Sharif University of Agriculture, Multan. The aim of the training was to train field enumerators for the collection of soil samples from farmer's field.

Objectives

- Collection of precise information from the respondents.
- Handling and administration of research instruments.
- To equip field enumerators with soil sampling techniques

Training Agenda:

Day 1		
Opening Session		
Time	Topic	Speakers
9: 00 – 9:30	Arrival of Guest and Participants	
9:30 – 9:45	Recitation of Holy Quran	
9:45 – 10:00	Welcome Remarks	
10:00–10:30	Introduction of Participants	
10:30 – 11:00	Pre-Test Evaluation/Assessment of participants knowledge	
11:00 – 11:15	Scope and Objectives of the Training	
	Technical Session	
11:15-11:30	Introduction to the key points of training	Dr. Zulqurnain Khan
11:30 – 12:00	Soil introduction, soil importance/benefits and challenges	Dr. Ahmad Mahmood
12:00 – 13:15	Introduction and learning of soil sampling techniques via instruments	**Dr. Muhammad Imran**
13:15 – 14:15	**Lunch & prayers Break**	
14:15 – 15:30	Hands on training for soil sample collection from field	Dr. Muhammad Imran Dr. Ahmad Mahmood
15:30 – 16:30	Detailed discussion on survey questionnaire and FGDs	Dr. Zulqurnain Khan
16:30 - 16:45	Recap of the day	Dr. Ahmad Mahmood
16:00 – 17:00	Concluding Remarks & Vote of Thanks	Dr. Zulqurnain Khan
	End of Day	

Participants.

The training session was attended by 12 participants, including staff members from various departments and guests from external organizations. This diverse group provided a rich environment for learning and discussion.

Pre-Evaluation

Prior to the commencement of the soil baseline study training, participants underwent a comprehensive pre-evaluation assessment. This assessment aimed to gauge their existing knowledge, skills, and attitudes regarding soil sample collection and handling practices. Participants completed surveys or quizzes that covered fundamental concepts such as the handling of soil samples, and basic knowledge regarding soil sample collection protocols.

Resource Persons

The success of this training program is largely attributed to the expertise and dedication of our resource persons. These individuals brought a wealth of knowledge and practical experience, ensuring that the training was both comprehensive and impactful. Below is a table detailing the resource persons who contributed to the training:

Speaker	Position
Dr. Zulqurnain Khan	Project Coordinator, MNS-University of Agriculture, Multan

Dr. Muhammad Imran	Master Trainer, Assistant Professor, Department of Soil and Environmental Sciences, MNS University of Agriculture, Multan
Dr. Ahmad Mahmood	Master Trainer, Assistant Professor, Department of Soil and Environmental Sciences, MNS University of Agriculture, Multan

Hands-On Activities

The hands-on training session was conducted related to survey questionnaire and soil sample collection and handling with practical skills by the trainer. Participants learned the proper procedure and protocols for this study. Participants practiced systematic procedures, ensuring the quality and quantity of the soil samples. Before performing hands on training participants equipped themselves with gloves, joggers, mask, water bottle, first aid kit and testing of instruments whether they are functional or not. The correct procedures followed for the collection of soil data and questionnaire survey. By mastering these techniques, participants gained confidence in their ability to effectively use procedures and protocols themselves and others in laboratory and field settings.

Discussion on survey questionnaire and FGDs

The questionnaire tool and FGDs were discuss in detailed with participants. The question presents in tool were related to the cotton crop, soil, climate change and practices of better cotton initiative

on farmer field. All the content in these tools was very informative and helpful for the participants. This tool was built to sensitize the participants and farmers for the study of soil baseline in Punjab and Sindh. Trainer asked participants to discuss this tool and then a hands-on training was conducted on this tool among participants. Participants raised different kind of questions related to this tool, trainer addressed these questions. For the practice of Farmer group discussion, also a session was conducted among different groups of participants to meet the goal of FGDs on farmer fields.

Data Collection Team

Team	Team Members (Lead)	Team
Team 01	Dr. Muhammad Shahzad (Survey) 03006575599 Dr. Raza Ullah (Soil sampling)	Dr Muhammad Kaleem Ullah Mr. Shahid Zaman
Team 02	Dr. Hafiz Amjad Ali Rana (Survey) 03458171808 Dr. Ahmad Mahmood (Soil sampling)	Muhammad Saleem Ashraf Muhammad Fazeel
Team 03	Dr. Gulfam Hasan (Survey) 03326653646 Dr. Zulqurnain Khan (Soil sampling)	Dr. Shafiq-ur-Rahman Zia Mr Saleem Sheikh, Mubashar Yasin
Team 04	Dr. Mudassar Yasin (Survey) 03006641556 Dr. Muhammad Imran (Soil sampling)	

Data Collection Plan

District	Date	Sample	Team
Team 01			
Bahawalpur	11-7-24 to 13-07-24	44	Team 01
Lodhran	14-07-24 to 15-07-24	26	Team 01
Bhawalnagar	18-07-24 to 19-07-24	31	Team 01
Team 02			
Rahim Yaar Khan	11-07-24 to 15-07-24	73	Team 02
Muzaffargarh	16-07-24	5	Team 02
DGK	17-07-24	7	Team 02
Rajanpur	18-07-24 to 20-07-24	46	
Team 03			
Multan	10-07-24 to 11-07-24	32	Team 03
Khanewal	12-07-24 to 13-07-24	31	Team 03
Layyah	14-07-24	9	Team 03
Mianwali	18-07-24 to 19-07-24	14	Team 03
Team 04			
Ghotki	21-07-24	19	Team 04

Khairpur	22-07-24	17	Team 04
Sukkur	23-07-24	15	Team 04
Nawabshah	24-07-24	13	Team 04
Noshero	25-07-24	10	Team 04
Umerkot	26-07-24	4	Team 04
Sangar	27-07-24	4	Team 04

Feedback and Evaluation

Feedback was collected from participants through surveys and verbal comments. Overall, the response was very positive, with attendees appreciating the interactive format and practical exercises. Suggestions for future sessions included more hands-on activities and advanced topics in biosafety.

Outcomes

The outcomes of this training was very fruitful for participants that their capacity for farmer's assessment via above mentioned tool. Participants learned techniques to tackle the farmers for collection of soil samples from farmer fields and their assessment via questionnaire.

Conclusion

This training was a significant step towards improving the methods of soil data collection techniques among participants. By equipping our with essential skills and knowledge, we are better prepared to handle soil samples and farmers assessment.