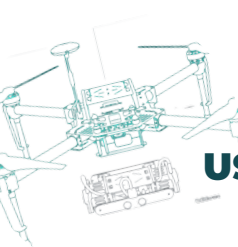# TRAINING AGENDA
"A STEP FORWARD TO DIGITAL DATA COLLECTION USING UAV, IMAGE PROCESSING AND INTERPRETATION"

At BISA Research Farm, Ludhiana
3rd -4th Nov, 2022

10:00–10:15	Welcome and Training Orientation (Components of BISA)	Dr. Uttam Kumar, CIMMYT-BISA
10:15–10:30	Address by the Chief Guest	TBD, ICAR, New Delhi
10:30–10:45	Opening Remarks by the Chairperson	TBD
10:45–11:00	Vote of Thanks	Dr.Pradeep Bhati CIMMYT-BISA
11:00–11:45	Background and Importance of digital data in modern wheat breeding	Dr. Uttam Kumar, CIMMYT-BISA
11:45–13:00	*Standardized data collection (a prerequisite to implementing digital data collection):* • Field Layout and seed preparation • Trait codes • Input file preparation • Field Book Description - an input in Data Tab • Data export and curation	Dr. Pradeep Bhati and Dr. Manish Vishwakarma, CIMMYT-BISA
13:00–14:00	**Lunch Break**	
14:00–15:30	Theory: Concept of Image Processing	Dr. Uttam Kumar, CIMMYT-BISA
15:30–15:45	**Tea Break**	
15:45–17:00	Practical Session: Pre-Flight preparation for UAV including desk work, flight controls, data collection and retrieval from UAV and integration with geographical information system (GIS)	Dr. Uttam Kumar, Dr Manish Vishwakarma, CIMMYT-BISA
DAY 2		
10:00–10:10	Welcome and Recap	Dr.Sundeep Kumar, NBPGR
10:10–11:00	*Practical session on pre-planting activities: Key to implementing digital data collection* • Virtual layout and GPS coordinates • Seed preparation for mechanical planting • Limit plot planter calibration and Demonstration in the field • Practice in the field with limit plot planter	Dr. Pradeep K Bhati & Manish Vishwakarma CIMMYT-BISA

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TRAINING AGENDA
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AT BISA RESEARCH FARM, LUDHIANA
3RD -4TH NOV, 2022

11:00–11:50	Application of GIS Tools in Plant Breeding	Dr. Prasun Kumar, Dr. Paresh Shirsath, CIMMYT-BISA
11:50–12:00	**TEA BREAK**	
12:00–12:40	*Practical session on field data collection* • NDVI, CT in digital field book • Photosynq Device • Import of field book and data export • Barcode development, scanner for plot yield and plant height	Dr. Pradeep K Bhati & DR. Manish Vishwakarma, CIMMYT-BISA
12:40–13:10	*Practical session on digital data collection* TGW data using ImageJ software (including M&M and setup)	Dr. Uttam Kumar/ Dr. Manish Vishwakarma,CIMMYT-BISA
13:10–14:10	**LUNCH BREAK**	
14:10–14:40	Practical challenges in the field: Trouble shoot and Q&A	Dr. Uttam, Dr. Pradeep, Dr. Manish, Mr. Avdhesh
14:40–14:50	Conclusion of the day	Dr. Manish Vishwakarma, CIMMYT-BISA
14:50–15:00	Vote of thanks	Mr. Lalit Sharma CIMMYT-BISA
END OF DAY		

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