



Short Course: Crop Genetic Diversity in the Field and on the Farm, Principles and Applications in Research Practices

11-15th September 2017, Department of Environmental Biology, Università di Roma Sapienza, Rome, Italy.

Date	Hours	Content	Teacher + (Country of location-nationality)	Book pages
Monday 11th Sept				
09:00-9:50	1	Chapter 1: Introduction and Overview		
		Our crop heritage: the crop genetic diversity maintained in the fields of small holder farmers	Devra Jarvis/Fabio Attore	1-2
		Crop genetic diversity and Traditional Varieties	Devra Jarvis	3-5
		Major and Minor Crops	Devra Jarvis	6-7
		Course Book overview	Fabio Attore	8-11
10:00-10:50	1	Chapter 2: The Origins of Agriculture, Crop Domestication, and Centers of Diversity	Toby Hdogkin	
		The origins of Agriculture and Crops	Toby Hodgkin	13-16
		The Changes Associated with Domestication	Toby Hodgkin	16-23
		The Process of Domestication	Toby Hodgkin	24-28
		Centers of Crop diversity and Centers of Origin	Toby Hodgkin	28-33
11:00-12:50	2	Chapter 3: Plant Genetic Resources, Conservation and Politics	Isabel Lopez Noriega	
		Nature, Biodiversity and Genetic Resources	Isabel Lopez Noriega	35-38
		Plant Hungers and Plant Collectors	Isabel Lopez Noriega	38-40
		The Development and Evolution of National Programs on Plant Genetic Resources	Isabel Lopez Noriega	41-44
		The Origins of an International Commitments to Plant Genetic Resources Conservation	Isabel Lopez Noriega	45-46
		Policy Debates on Conservation	Isabel Lopez Noriega	46-57

		The Use of Genetic Resources for Plant Breeding	Isabel Lopez Noriega	58-62
13:00-14:00		LUNCH BREAK		
14:00-17:50	4	Chapter 4: Diversity and Its Evolution in Crop Populations	Toby Hodgkin	
		The Nature of Diversity	Toby Hodgkin	64-66
		Crops, Varieties, and Populations	Toby Hodgkin	67-70
		Population Genetic Structure	Toby Hodgkin	71-77
		Evolution in Crop Varieties and Populations	Toby Hodgkin	78-84
		Reproductive Biology	Toby Hodgkin	84-89
Tuesday 12th Sept				
09:00-12:50	4	Chapter 5: Measuring Diversity in Crops	Devra Jarvis	
		Crops and Crop Varieties in Production Systems	Devra Jarvis	91-92
		Exploring the Extent and Distribution of Diversity (agronomic, biochemical, molecular)	Massimo Reverberi	92-107
		Gathering data using participatory approaches	Devra Jarvis	108-118
		Designing and Investigation	Paolo Colangelo	119-123
13:00-14:00		LUNCH BREAK		
14:00-17:50	4	Chapter 6: Abiotic and Biotic Components of Agricultural Ecosystems	Fabio Attore	
		Abiotic components of Agroecosystems	Fabio Attore	126-131
		Biotic Components of Agricultural Ecosystems	Massimo Reverberi	131-137
		Farmer Characterization and Classification of Abiotic and Biotic Components	Devra Jarvis	137-145
		Reducing the Dimensionality of Complex Data Sets	Fabio Attore	146-149
		Ecosystem Diversity and Function	Devra Jarvis	150-153
Wednesday 13th Sept				
09:00 -12:50	4	Chapter 7: Diversity in, and Adaptation to, Adverse Environments On-farm	Massimo Reverberi	
		Evolution of Crop Varieties in Stress Prone Environments	Massimo Reverberi	154-157

		Abiotic Stress and Crop Genetic Diversity	Muhabbat Turdieva	157-163
		Biotic Stress and Crop Genetic Diversity	Massimo Reverberi	163-169
		Farmer Management of Crop Genetic Diversity to Cope with Environmental Stress	Devra Jarvis	169-172
		Identifying Where Diversity is Used to Cope with Environmental Stress	Muhabbat Turdieva	172-180
		Genetic Diversity, Damage, and Genetic Vulnerability	Paolo Colangelo	181-190
13:00-14:00		LUNCH BREAK		
14:00 – 17:50	4	Chapter 8: Who Are the Managers of Diversity? Characterizing the Social, Cultural, and Economic Environments and Measuring the values of on farm diversity	Rose Nankya	
		Farmers' Roles and the Management of Crop Diversity	Rose Nankya	191-199
		Social Relationships and the Distribution of Diversity	Rose Nankya	199-202
		Social Capital, Collective Action and Property Rights	Muhabbat Turdieva	202-203
		Tool and Methods for Documenting and Relating Farmer Characteristics to Crop Genetic diversity	Paolo Colangelo	203-211
Thursday 14th Sept				
09:00-12:50	4	Chapter 9: Measuring the Values of On-Farm Diversity	Devendra Gaucham	
		Public and Private Values of Diversity	Devendra Gaucham	212-214
		Varietal Choice and Diversity Maintenance	Devendra Gaucham	215-220
		Econometric Models and Value Chain Actors	Devendra Gaucham	220-226
		Measuring Non-Market Values of Diversity	Rose Nankya	226-231
13:00-14:00		LUNCH BREAK		
14:00 – 17:50	4	Chapter 10: Policy and Genetic Diversity On-Farm	Isabel Lopez Noriega	
		Policies and Legal Frameworks that Have a Negative Impact on Farmers' Capacities to Use Diversity On-Farm	Isabel Lopez Noriega	232-242
		Policy Processes: Overview on Concepts and Methods	Isabel Lopez Noriega	242-249
		Developing Policies that Support Farmers' Role as Generators, Managers, and Conservers of Crop Diversity	Isabel Lopez Noriega	249-254

Friday 15th Sept				
09:00-12:50	4	Chapter 11: Genetic Diversity and Selection Pressures at Different Social, Spatial, and Temporal Scales	Muhabbat Turdieva	
		The Crop Cycle	Rose Nankya	255-258
		Use of Harvested Materials and Diversity of Traditional Varieties	Muhabbat Turdieva	259-263
		Selection During Crop Production and Seed Management	Muhabbat Turdieva	263-264
		Patterns of Seed Supply: The “Seed Systems”	Devra Jarvis	267-274
		Social, Spatial and Temporal Dimensions of Traditional Varieties	Devra Jarvis	275-282
13:00-14:00		LUNCH BREAK		
14:00-15:50	2	Chapter 12: Strategies for Collaboration and Intervention	Paola De Santis	
		Institutional and Partner Diversity	Paola De Santis	283-285
		Building Trust and Equitable Collaboration	Paola De Santis	286-290
		Actions that Incorporate Genetic, Ecological, Social and Economic Concerns in Support of On-farm Management of Crop Genetic Diversity	Devra Jarvis	291-303
		Farmers Benefit from the Use and Conservation of Materials	Devendra Gaucham	303-311
16:00-17:50	2	Chapter 13: Traditional Varieties and Agricultural Productivity	Devra Jarvis	
		Socioeconomic, Policy, Environmental, Biological and Genetic Dimensions	Fabio Attore	313-320
		The Future Value of Traditional Varieties	Devra Jarvis	320-323
		Approaches to Maintenance of Traditional Varieties	Paola De Santis	323-325



Course teachers:

Devra Jarvis	Principal scientist, Genetic Diversity, Productivity and Resilience, Bioversity International and Adjunct Faculty Washington State
Paola de Santis	Researcher in Linguistics and Participatory Diagnostic Approaches, Bioversity International
Fabio Attorre	Researcher in Ecosystem Approach to the Conservation of Biodiversity at Sapienza University
Paolo Colangelo	Researcher in Evolutionary Biology CNR - Istituto per lo Studio degli Ecosistemi, Verbania-Pallanza
Massimo Reverberi	Professor in Molecular Plant Pathology at Sapienza University
Toby Hodgkin	Coordinator, Platform for Agrobiodiversity Research (PAR) and Researcher in Genetic Diversity
Muhabbat Turdieva	Central Asia Regional Coordinator and Researcher in Horticultural, Bioversity International, Uzbekistan
Rose Nankya	Researcher in Seed Systems and Genetic Diversity, Bioversity International, Uganda
Devendra Gaucham	Economist, National Project Manager, Bioversity International, Nepal
Isabel Lopez Noriega	Researcher in Policy, Bioversity International