

1. Record Nr.	UNINA9910829105503321
Titolo	Livestock // Committee on Managing Global Genetic Resources: Agricultural Imperatives, Board on Agriculture, National Research Council
Pubbl/distr/stampa	Washington, D.C., : National Academy Press, 1993
ISBN	1-280-21181-4 9786610211814 0-309-56243-0 0-585-15396-5
Edizione	[1st ed.]
Descrizione fisica	1 online resource (293 pages) : illustrations
Collana	Managing global genetic resources
Disciplina	636.08/21
Soggetti	Livestock - Germplasm resources
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Managing Global Genetic Resources -- Copyright -- Preface -- Acknowledgments -- Contents -- Executive Summary -- TWO VIEWS ON LIVESTOCK CONSERVATION -- GENETIC DIVERSITY OF LIVESTOCK -- Origins of Traditional Breeds -- Displacement of Traditional Breeds -- The Impact of Technology -- LIVESTOCK PRODUCTION SYSTEMS -- WHY CONSERVE THE GENETIC DIVERSITY OF LIVESTOCK? -- Economic Benefits -- Scientific Benefits -- Sociocultural Benefits -- TECHNOLOGIES FOR CONSERVING AND USING GERMPLASM -- Molecular Technologies -- Characterization of Genomes -- Gene Transfer and Mapping Technologies -- Genomic Libraries -- Animal Reproduction Technologies -- METHODS OF PRESERVING ANIMAL GERMPLASM -- EFFORTS TO IMPLEMENT LIVESTOCK CONSERVATION -- RECOMMENDATIONS -- Expanded Programs and Activities -- Documentation of Breeds -- Increased Cooperation -- Research and Technology Development -- Cryopreservation as a Supplement to Breeding Populations -- National Initiatives -- A Global Organization -- 1 The Need to Conserve Livestock Genetic Resources -- THE DEVELOPMENT OF ANIMAL AGRICULTURE -- THE EFFECTS OF TECHNOLOGY ON GENETIC DIVERSITY -- Breeding and Improvement Technologies -- Reproductive Technologies -- Changes in Production

Systems and Nutrition -- RATIONALES FOR CONSERVING LIVESTOCK GENETIC RESOURCES -- Economic Reasons for Conservation -- Scientific Rationale -- Cultural and Historical Rationale -- APPROACHES TO LIVESTOCK CONSERVATION -- The Utilizationist's View -- The Preservationist's View -- The Committee's View -- RECOMMENDATIONS -- 2 Essential Conservation Considerations -- CRITERIA FOR CONSERVING POPULATIONS -- Status and Vulnerability of the Population -- Uniqueness and Importance of the Population -- STRATEGIES FOR SAMPLING POPULATIONS -- METHODS FOR PRESERVING LIVESTOCK GERMPLASM -- Managing Live Populations. Public and Private Initiatives to Manage Live Populations -- Cryopreservation -- Genomic Libraries -- RECOMMENDATIONS -- 3 Measurement and Use of Genetic Variation -- THE INFLUENCE OF HUMAN SOCIETY -- Subdivision into Breeds -- FACTORS AFFECTING GENETIC VARIATION -- Selection -- Migration -- Mutation -- Genetic Drift -- GERMPLASM USE -- Industrial Stocks -- Nonindustrial Populations -- RECOMMENDATIONS -- 4 New Technology and Its Impact on Conservation -- METHODS TO QUANTIFY GENETIC VARIATION -- Molecular Quantification of Genetic Diversity and Distances -- Characterizing Mitochondrial DNA -- Developing Genetic Maps -- DNA LIBRARIES AND GENE TRANSFER METHODOLOGIES -- Establishing an Animal Genomic Library -- Cloning Genes in a Library -- Screening an Animal Genomic Library -- Transfer of a Cloned Gene into Another Animal Line -- DNA Libraries as Supplements to Conservation Programs -- Identifying Quantitative Traits -- REPRODUCTIVE TECHNOLOGIES -- Cryopreservation of Semen and Embryos -- Multiple Ovulation and Embryo Transfer -- Embryo Splitting and Cloning -- Determining Sex -- HEALTH STATUS OF GERMPLASM -- RECOMMENDATIONS -- 5 National Programs -- EXAMPLES OF CURRENT NATIONAL EFFORTS -- Hungary -- Brazil -- India -- Nongovernmental Projects -- ORGANIZATIONAL ELEMENTS OF A NATIONAL PROGRAM -- Documentation and Inventory -- Animal Genetic Resources Data Base -- Conservation of Unique and Endangered Populations -- Evaluation and International Use of Indigenous and Exotic Populations -- Collaboration with Other Programs -- Opportunities for Research -- GERMPLASM CONSERVATION IN DEVELOPED AND DEVELOPING COUNTRIES -- RECOMMENDATIONS -- Information and Data -- 6 International Programs and a Global Mechanism -- INTERNATIONAL PROGRAMS -- Efforts on a Global Level -- The FAO Program on Managing Animal Genetic Resources -- Global Inventory. Breed Preservation -- Indigenous Breed Development and Conservation -- Gene Technologies -- An International Legal Framework -- INFORMATION SOURCES AND DATA BASES -- Data Bases -- CREATING REGIONAL STORES OF FROZEN GERMPLASM -- RELATED ISSUES OF PLANT GENETIC RESOURCE PROGRAMS -- GLOBAL CONSERVATION OF ANIMAL GERMPLASM -- Criteria for a Global Program -- Donor Confidence -- Scientific Capability -- Administrative Expertise -- Consultative Mechanism -- Options for a Global Program -- An Institute within the Consultative Group on International Agricultural Research -- Expanded Efforts of the Food and Agriculture Organization -- Expanded Support of an Existing Conservation Organization -- RECOMMENDATIONS -- References -- Appendixes -- Appendix A Global Status of Livestock and Poultry Species -- Cattle -- Europe -- Asia -- Africa -- The Americas -- Australia -- Goats -- Europe -- Asia -- Africa -- The Americas -- Pigs -- Europe -- Asia -- Africa -- The Americas -- Australia and New Zealand -- Horse -- Europe -- Asia -- Africa -- The Americas -- Australia -- Sheep -- Europe -- Asia --

Africa -- The Americas -- Australia and New Zealand -- Buffalo -- Poultry -- Chickens -- Turkeys -- Guinea Fowl -- Japanese Quail -- Domestic Ducks -- Muscovy Ducks -- Domestic Geese -- Pigeons -- References -- Appendix B Embryo Transfer: An Assessment of the Risks of Disease Transmission -- Embryo Transfer Technology in Domestic Species -- The Disease Transmission Potential of Embryos -- Mechanisms of Disease Transmission by Embryo Transfer -- Studies of the Disease Transmission Potential of Embryos -- Transmissibility of Specific Agents by Embryo Transfer -- African Swine Fever Virus -- Results and Conclusions -- Akabane Virus -- Results and Conclusions -- Bluetongue Virus -- Results and Conclusions -- Bovine Leukemia Virus -- Results and Conclusions. Bovine Viral Diarrhea Virus -- Results and Conclusions -- Brucella Abortus -- Results and Conclusions -- Caprine Arthritis and Encephalitis Virus -- Results and Conclusions -- Foot-and-Mouth Disease Virus -- Results and Conclusions -- Haemophilus Somnus -- Results and Conclusions -- Hog Cholera Virus -- Results and Conclusions -- Infectious Bovine Rhinotracheitis Virus -- Results and Conclusions -- Porcine Parvovirus -- Results and Conclusions -- Pseudorabies Virus -- Results and Conclusions -- Rinderpest Virus -- Results and Conclusions -- Scrapie -- Results and Conclusions -- Swine Vesicular Disease Virus -- Results and Conclusions -- Vesicular Stomatitis Virus -- Results and Conclusions -- Conclusions -- Constraints to the International Exchange of Embryos -- Recommendations -- References -- ANNEX B-1 SANITARY TECHNIQUES FOR HANDLING EMBRYOS -- Embryo Collection -- Embryo Washing -- Trypsin Treatment of Embryos -- Inspection of Embryos for Intactness of Zona Pellucida -- Micromanipulation of Embryos -- Cryopreservation and Thawing of Embryos -- Embryo Identification -- Embryo Transfer -- Conclusion -- ANNEX B-2 TABLES SUMMARIZING RESEARCH DATA -- Appendix C Animal Genetic Resources: Sperm -- Major Species of Domestic Livestock Involved in International Germplasm Trade -- Artificial Breeding Centers and Donor Animal Requirements -- Control of Collection, Handling, Preservation, and Storage of Semen -- Major Diseases of Concern in Artificial Breeding -- List A Agents -- Foot-and-Mouth Disease Virus -- Bluetongue Virus -- Rinderpest Virus -- Lumpy Skin Disease (Neethling Virus) -- Sheep and Goat Pox Virus -- Rift Valley Fever Virus -- Vesicular Stomatitis Virus -- Contagious Bovine Pleuropneumonia -- Swine Vesicular Disease Virus -- African Swine Fever Virus -- Hog Cholera Virus -- Summary -- List B Agents -- Bacterial and Protozoal Agents. Mycoplasmas -- Infectious Bovine Rhinotracheitis -- Bovine Leukosis Virus -- Bovine Viral Diarrhea Virus -- Ephemeral Fever Virus -- Akabane Virus -- Parainfluenza 3 Virus -- Porcine Parvovirus -- Diseases of Sheep and Goats -- Diseases of Horses -- Poultry Diseases -- Artificial Breeding of Endangered and Rare Species -- Recommendations for Further Research -- References -- Glossary -- Abbreviations -- Authors -- Index.

Sommario/riassunto

Agricultural techniques used to increase production of cattle, sheep, and other major species have actually threatened the future genetic diversity of livestock populations, particularly in the Third World. This volume explores the importance of animal genetic diversity and presents a blueprint for national and international efforts to conserve animal genetic resources. It also evaluates genetic techniques useful in conservation programs and provides specific recommendations for establishing data bases and conducting research.
