

1. Record Nr.	UNINA9910877092703321
Autore	Sprent Janet I
Titolo	Legume nodulation : a global perspective // Janet I Sprent
Pubbl/distr/stampa	Chichester, West Sussex ; ; Ames, Iowa, : Wiley-Blackwell, 2009
ISBN	1-282-34375-0 9786612343759 1-4443-1638-9 1-4443-1639-7
Descrizione fisica	1 online resource (220 p.)
Disciplina	572/.5452374
Soggetti	Legumes - Roots - Physiology Nitrogen-fixing microorganisms Nitrogen - Fixation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Legume Nodulation A Global Perspective; Contents; Preface; 1 Nodulation in a Taxonomic Context; 1.1 Caesalpinioideae; 1.2 Mimosoideae; 1.2.1 Acacieae; 1.2.2 Ingeae; 1.2.3 Mimoseae; 1.3 Papilionoideae; 1.3.1 Non-nodulation in the Papilionoideae; 1.3.2 Nodulating papilionoids with primitive nodule structure; 1.3.3 Tribes with the 50kb inversion; 1.3.4 The Dalbergioid clade; 1.3.5 The Mirbelioid clade; 1.3.6 The Millettoid clade; 1.3.7 The Robinioid clade; 1.3.8 The inverted repeat lacking clade (IRLC); 2 Global Distribution of Legumes; 2.1 Deserts; 2.2 Savannas; 2.2.1 African savannas 2.2.2 Neotropical savannas 2.2.3 Australian savannas; 2.3 Seasonally dry tropical forests (succulent biome); 2.3.1 Caatinga; 2.3.2 Other areas; 2.4 Rain forests; 2.4.1 Atlantic forest; 2.4.2 Temperate rain forests; 2.4.3 Tropical rain forests; 2.5 Temperate regions; 2.5.1 Mediterranean ecosystems; 2.5.2 Temperate, boreal and high altitude legumes; 2.6 Invasive legumes; 3 Evolution of Nodulation; 3.1 When did nodulation first occur?; 3.2 Where did nodulation first occur, and where are nodulated legumes going?; 3.2.1 Madagascar as a special case; 3.2.2 Recent evolution 3.3 How was the information for nodulation acquired? 3.3.1 Ancient

genes that have been recruited for symbiotic purposes; 3.3.2 Gene duplication; 3.4 Why was nodulation necessary?; 3.5 Model legumes; 4 Bacteria Nodulating Legumes; 4.1 -Proteobacteria; 4.1.1 Rhizobium; 4.1.2 Sinorhizobium and Ensifer; 4.1.3 Other members of Rhizobiaceae; 4.1.4 Bradyrhizobium; 4.1.5 Azorhizobium and Devosia; 4.1.6 Methylobacterium; 4.1.7 Ochrobactrum; 4.1.8 Mesorhizobium; 4.1.9 Phyllobacterium; 4.2 -Proteobacteria; 4.3 Other bacterial nodule occupants; 4.4 Specificity; 4.5 Competition
4.6 Stability and genetic exchange
5 Development and Functioning of Nodules; 5.1 Root hair infection; 5.2 The roles of hormones; 5.3 Autoregulation; 5.4 Formation of symbiosomes; 5.4.1 Bacteroid size and shape; 5.4.2 The role of poly- γ -hydroxybutyrate (PHB); 5.5 Nodules lacking root hair infection; 5.5.1 Dalbergioid legumes; 5.5.2 Genisteae and Crotalariae; 5.5.3 The special case of Sesbania; 5.6 Other variations in nodule structure; 5.7 Functioning nodules: the critical role of oxygen; 5.8 Nitrogen fixation and export of products; 5.8.1 The hydrogen enigma; 5.9 Nodule effectiveness
5.10 The bacteria within the nodule - control by the bacteria, plant or both?
5.11 Constraints on nitrogen fixation in agriculture and the environment; 5.11.1 Waterlogging, drought and salinity; 5.11.2 Temperature; 5.11.3 Edaphic factors; 5.12 Legumes, pests and pathogens; 6 Some Legumes for the Future?; 6.1 Human food; 6.1.1 Vigna spp.; 6.1.2 Other phaseoloid legumes; 6.2 Forage legumes; 6.3 Pharmaceutical uses; 6.4 Other uses; Appendices; I Caesalpinioideae; II Mimosoideae; III Papilionoideae; References; Taxonomic Index; General Index; Color plate section between pages 86 and 87; Rest

Sommario/riassunto

This important book provides a comprehensive review of our current knowledge of the world's leguminous plants and their symbiotic bacteria. Written by Professor Janet Sprent, a world authority in the area, Legume Nodulation contains comprehensive details of the following:
An up to date review of legume taxonomy and a full list of the world's genera
Details of how legumes are distributed throughout the world
A review of the evolution of legume nodulation
Comprehensive details of all microorganisms known to be symbiotic with legumes
Ecological
