
CONTENTS

Preface	xi
Introduction	xiii

PART I ENVIRONMENTAL FACTORS AND THEORIES OF PLANT CULTIVATION

CHAPTER 1	PRIMARY FACTORS AFFECTING SEED GERMINATION, PLANT ESTABLISHMENT, AND GROWTH	3
	SUNLIGHT	4
	TEMPERATURE	4
	CARBON DIOXIDE	5
	ANIMALS AND OTHER PLANTS	5
	SOIL WATER	5
	Soil Texture	7
	Soil Structure	11
	Soil Organic Matter	13
	Soil Depth	14
	SOIL AIR	15
	NUTRIENTS	15
	Nitrogen	18
	Legumes	19
	Nitrogen Fertilizer	21
	Phosphorous Fertilizer	22
	Potassium Fertilizer	24
	Secondary and Micronutrient Fertilizer	25
	Mixed Fertilizers	26
	SOIL ACIDITY	28

CHAPTER 2	TILLAGE	31
	SOIL WATER	31
	SOIL COMPACTION	32
	SUBSOILING	34
	SANDY SOILS	34
	SILTY OR CLAYEY SOILS	34
CHAPTER 3	SOIL TESTING, INTERPRETATION, AND RECOMMENDATIONS	37
	SOIL SAMPLING	37
	SOIL NUTRIENT EXTRACTION	38
	SOIL EXTRACT ANALYSIS	38
	INTERPRETATION	39
	RECOMMENDATIONS	39
CHAPTER 4	SEEDS	41
	MOISTURE	41
	SEED DORMANCY	42
	SEED LAWS	42
CHAPTER 5	MULCH	43
CHAPTER 6	REFORESTATION	47
	DIRECT SEEDING	49
	Site Selection	51
	Species Selection	51
	Seed Quality, Storage, and Treatment	51
	Seed Sowing	52
	Advantages and Disadvantages of Direct Seeding	54
	SEEDLING PLANTING	54
	Seedling Storage	55
	Hand Planting	55
	Machine Planting	56
	Seedling Planting Precautions	57
	REFERENCES	58
	SUGGESTED READING: PART I	59
PART II	THE PRACTICE OF REVEGETATION	
	INTRODUCTION	62
CHAPTER 7	SOIL SAMPLING, ANALYSIS, AND RECOMMENDATIONS	63
	SOIL SAMPLING	63
	SOIL ANALYSIS	65
	RECOMMENDATIONS	68

CHAPTER 2	TILLAGE	31
	SOIL WATER	31
	SOIL COMPACTION	32
	SUBSOILING	34
	SANDY SOILS	34
	SILTY OR CLAYEY SOILS	34
CHAPTER 3	SOIL TESTING, INTERPRETATION, AND RECOMMENDATIONS	37
	SOIL SAMPLING	37
	SOIL NUTRIENT EXTRACTION	38
	SOIL EXTRACT ANALYSIS	38
	INTERPRETATION	39
	RECOMMENDATIONS	39
CHAPTER 4	SEEDS	41
	MOISTURE	41
	SEED DORMANCY	42
	SEED LAWS	42
CHAPTER 5	MULCH	43
CHAPTER 6	REFORESTATION	47
	DIRECT SEEDING	49
	Site Selection	51
	Species Selection	51
	Seed Quality, Storage, and Treatment	51
	Seed Sowing	52
	Advantages and Disadvantages of Direct Seeding	54
	SEEDLING PLANTING	54
	Seedling Storage	55
	Hand Planting	55
	Machine Planting	56
	Seedling Planting Precautions	57
	REFERENCES	58
	SUGGESTED READING: PART I	59
PART II	THE PRACTICE OF REVEGETATION	
	INTRODUCTION	62
CHAPTER 7	SOIL SAMPLING, ANALYSIS, AND RECOMMENDATIONS	63
	SOIL SAMPLING	63
	SOIL ANALYSIS	65
	RECOMMENDATIONS	68