

Contents

1	Food Security: A Global Problem.....	1
1.1	Concept of Food Security	1
1.1.1	Origin of Food Security Concept.....	1
1.1.2	World Food Summit.....	2
1.1.3	Probable Definitions of Food Security Concept	2
1.1.4	Factors Determining the Food Availability	3
1.2	Ranks of Food Security.....	4
1.2.1	Household Level	4
1.2.2	Subnational Level	4
1.2.3	National Level.....	4
1.3	Food Security Pillars.....	5
1.3.1	Availability of Food	5
1.3.2	Access of Individuals to the Available Food.....	5
1.3.3	Food Consumption.....	5
1.3.4	Food Stability	6
1.4	Difference Between Food Security and Nutrition Security	6
1.4.1	Food Insecurity	7
1.4.2	Food Insecurity Categories	7
1.4.3	Expression of Food Insecurity	8
1.4.4	How to Measure the Severity in Food Insecurity?.....	8
1.4.5	Integrated Food Security Phase Classification (IPC).....	9
1.5	Who Is in Actual Facing the Problem of Food Insecurity?.....	10
1.6	Why Food Security Is Termed as a Chief Global Challenge?	10
1.7	Global Hunger Index (GHI) 2016.....	11
1.8	Challenges to Food Security	19
1.8.1	Mounting Population	19
1.8.2	Growing Incomes Influence the Diets.....	20
1.9	Critical Consequences of Food Scarcity	28
1.9.1	Rising Food Prices	29
1.9.2	Hunger and Malnutrition.....	30
1.9.3	Disease Prevalence Chances	32

1.9.4	Threat to Humanity.....	33
1.9.5	Development Under Threat.....	34
1.10	Possible Solutions to Overcome Food Scarcity	34
1.10.1	Development of Government Support Schemes	34
1.10.2	Employment of Sustainable Agricultural Techniques.....	34
1.10.3	Provide Partnerships to Farmers	34
1.10.4	Need to Improve Financial Status of Individuals.....	35
1.10.5	Development of Livestock	35
1.10.6	Infrastructure Development	35
1.10.7	Improvement of Irrigation Schemes	35
1.10.8	Development of Resistant Varieties	35
1.10.9	Halt the Spread of Invasive Species	36
1.10.10	Increase the Scope of Agricultural Careers Among Young People.....	36
1.10.11	Ensuring the Contribution of Women in Agriculture.....	36
1.10.12	Switching to Wild Foods.....	36
1.11	World's Efforts in Food Security	37
1.11.1	Efforts by the United Nations.....	37
1.11.2	Efforts by the FAO (Food and Agriculture Organization).....	38
1.11.3	USAID Efforts.....	38
1.11.4	By World Food Programme (WFP).....	38
1.11.5	Worldwide Corporations to Triumph Food Security.....	38
1.11.6	World Economic Forum Contribution.....	39
2	Edible Wild Plants: A Solution to Overcome Food Insecurity.....	41
2.1	What Are the Edible Wild Plants?	41
2.2	Characteristics of WEPs	41
2.3	Enlightenment to Wild Edible Plants.....	42
2.4	Why Wild Edible Plants Are Important?.....	42
2.5	A Brief Review of Wild Edible Plants	45
2.6	Can Edible Wild Plants Be Used as an Alternative Food Source?.....	45
2.7	Steps to Find Wild Edible Plants	46
2.7.1	Locate Wild Edible Plants Habitat.....	46
2.7.2	Preknowledge About Wild Edible Plants.....	46
2.7.3	Always Take Initiative from Small Scale.....	46
2.7.4	Start Looking to Other Areas	47
2.7.5	Look for Berries.....	49
2.7.6	Search for Berries on Trees.....	49
2.7.7	Search for Nuts Underneath the Trees	49
2.7.8	Look for Fruiting Trees.....	50
2.7.9	Search Plant Near Water Bodies	51
2.7.10	Be Aware of Poisonous Flowers	52
2.7.11	Search for Vines.....	52
2.7.12	Look for Deciduous Leaves	53
2.7.13	Conifer Leaves	54

2.7.14	Test for Poison for Unknown Wild Edible Plants	54
2.7.15	Collect Those Plants Which Are Abundant.....	56
2.7.16	Avoid to Look Around Trashes	56
2.7.17	Washing Rule	56
2.8	General Preparatory Methods for Wild Edible Plants	56
3	Diversity of Edible Wild Plants: Global Perspectives.....	59
3.1	Classification of Wild Edible Plants	59
3.2	Wild Edible Plant Systems.....	62
3.3	Some Important Families of Wild Edible Plants.....	63
4	Status of Edible Wild Plants in Pakistan: Case Studies	65
4.1	<i>Berberis lycium</i> Royle.....	65
4.1.1	Systematic Studies	66
4.1.2	Ecology	66
4.1.3	Morphological Description	66
4.1.4	Organoleptography.....	67
4.1.5	Edible Potential.....	67
4.1.6	Edible and Medicinal Uses	67
4.1.7	Folk Preparations	68
4.2	<i>Cydonia oblonga</i> Mill	69
4.2.1	Systematic Studies	69
4.2.2	Ecology	70
4.2.3	Morphological Description	70
4.2.4	Organoleptography.....	70
4.2.5	Edible Potential.....	71
4.2.6	Edible and Medicinal Uses	71
4.2.7	Folk Preparations	71
4.3	<i>Daphne mucronata</i> Royle	72
4.3.1	Systematic Studies	73
4.3.2	Ecology	73
4.3.3	Morphological Description	73
4.3.4	Organoleptography.....	74
4.3.5	Edible Potential.....	74
4.3.6	Edible and Medicinal Uses	74
4.3.7	Folk Preparations	74
4.4	<i>Debregeasia salicifolia</i> (D.Don) Rendle.....	75
4.4.1	Systematic Studies	75
4.4.2	Ecology	76
4.4.3	Morphological Description	76
4.4.4	Organoleptography Studies.....	77
4.4.5	Ethnobotanical Data.....	77
4.4.6	Local Uses.....	77
4.4.7	Medicinal Properties	78
4.4.8	Folk Preparations	78

4.5	<i>Ficus racemosa</i> L.	79
4.5.1	Systematic Studies	79
4.5.2	Ecology	80
4.5.3	Morphological Description	80
4.5.4	Organoleptography.....	80
4.5.5	Edible Potential.....	81
4.5.6	Edible and Medicinal Uses	81
4.5.7	Medicinal Properties	81
4.5.8	Folk Preparations	81
4.6	<i>Fragaria nubicola</i> Lindl. ex Lacaita	82
4.6.1	Systematic Studies	83
4.6.2	Ecology	83
4.6.3	Morphological Description	83
4.6.4	Organoleptography.....	84
4.6.5	Edible Potential.....	84
4.6.6	Edible and Medicinal Uses	84
4.6.7	Folk Preparations	85
4.7	<i>Myrsine africana</i> L.	86
4.7.1	Systematic Studies	86
4.7.2	Ecology	87
4.7.3	Morphological Description	87
4.7.4	Organoleptography.....	88
4.7.5	Edible Potential.....	88
4.7.6	Edible and Medicinal Uses	88
4.7.7	Medicinal Properties	88
4.7.8	Folk Preparations	89
4.8	<i>Oxalis corniculata</i> L.	89
4.8.1	Systematic Studies	90
4.8.2	Ecology	90
4.8.3	Morphological Description	90
4.8.4	Organoleptography.....	91
4.8.5	Edible Potential.....	91
4.8.6	Edible and Medicinal Uses	91
4.8.7	Medicinal Properties	92
4.8.8	Folk Preparations	92
4.9	<i>Pistacia integerrima</i> J. L. Stewart ex Brandis.....	93
4.9.1	Systematic Studies	93
4.9.2	Ecology	94
4.9.3	Morphological Description	94
4.9.4	Organoleptography.....	95
4.9.5	Edible Potential.....	95
4.9.6	Edible and Medicinal Uses	95
4.9.7	Folk Preparations	96
4.10	<i>Prunus persica</i> (L.) Batsch	96
4.10.1	Systematic Studies	97
4.10.2	Ecology	97

4.10.3	Morphological Description	97
4.10.4	Organoleptography	98
4.10.5	Edible Potential	98
4.10.6	Edible and Medicinal Uses	98
4.10.7	Folk Preparations	99
4.11	<i>Punica granatum</i> L.	100
4.11.1	Systematic Studies	100
4.11.2	Ecology	101
4.11.3	Morphological Description	101
4.11.4	Organoleptography	101
4.11.5	Edible Potential	102
4.11.6	Edible and Medicinal Uses	102
4.11.7	Folk Preparations	102
4.12	<i>Rubus fruticosus</i> L.	103
4.12.1	Systematic Studies	104
4.12.2	Ecology	104
4.12.3	Morphological Description	104
4.12.4	Organoleptography	105
4.12.5	Edible Potential	105
4.12.6	Edible and Medicinal Uses	105
4.12.7	Folk Preparations	106
4.13	<i>Sageretia thea</i> (Osbeck) M. C. Johnst	106
4.13.1	Systematic Studies	107
4.13.2	Ecology	107
4.13.3	Morphological Description	107
4.13.4	Organoleptic Studies	108
4.13.5	Ethnobotanical Data	108
4.13.6	Local Uses	108
4.13.7	Folk Preparations	108
4.14	<i>Solanum nigrum</i> L.	109
4.14.1	Systematic Studies	109
4.14.2	Ecology	110
4.14.3	Morphological Description	110
4.14.4	Organoleptography	111
4.14.5	Edible Potential	111
4.14.6	Edible and Medicinal Uses	111
4.14.7	Folk Preparations	111
4.15	<i>Solanum surattense</i> Burm. f.	112
4.15.1	Systematic Studies	113
4.15.2	Ecology	113
4.15.3	Morphological Description	113
4.15.4	Organoleptography	114
4.15.5	Edible Potential	114
4.15.6	Edible and Medicinal	114
4.15.7	Folk Preparations	115

4.16	<i>Viburnum grandiflorum</i> Wall. ex DC	116
4.16.1	Systematic Studies	116
4.16.2	Ecology	117
4.16.3	Morphological Description	117
4.16.4	Organoleptography	117
4.16.5	Edible Potential	118
4.16.6	Edible and Medicinal Uses	118
4.16.7	Folk Preparations	118
4.17	<i>Zanthoxylum armatum</i> DC	119
4.17.1	Systematic Studies	119
4.17.2	Ecology	120
4.17.3	Morphological Description	120
4.17.4	Organoleptography	121
4.17.5	Edible Potential	121
4.17.6	Edible and Medicinal Uses	121
4.17.7	Folk Preparations	121
4.18	<i>Ziziphus sativa</i> Gaertn.	122
4.18.1	Systematic Studies	123
4.18.2	Ecology	123
4.18.3	Morphological Description	123
4.18.4	Organoleptography	124
4.18.5	Edible Potential	124
4.18.6	Edible and Medicinal Uses	124
4.18.7	Folk Preparations	125
5	Nutritional Contents and Analysis of Edible Wild Plants	127
5.1	General Benefits of Wild Edible Plants	128
5.2	Role of Edible Wild Plants in Balanced Diet	129
5.3	Nutritional Explorations of Edible Wild Plants	130
5.4	Examples of Nutritional/Medicinal Content of Some Wild Edibles	131
5.4.1	Taro	131
5.4.2	<i>Colocasia</i>	131
5.4.3	Torch Ginger	132
5.4.4	Ivy Gourd: Pak Tamlueng	132
5.4.5	Wood Sorrel	133
6	List of Useful Edible Wild Plants for Daily Use	135
6.1	Wild edible plants study in Bullen District Northwest Ethiopia	135
6.2	Wild edible plants diversity in Nepal (Upreti et al. 2012)	142
6.3	Wild edible plant studies for Takht-e-Sulaiman Hills, Northwest Pakistan	150

7 A Pictorial Guide to Edible Wild Plants 159

**8 Conservation Measures and Sustainable Production
of Edible Wild Plants 175**

8.1 A Historic Outline About Using Wild Edible Plants 175

8.2 A Relationship Between Wild Edible Plants
and Current Rural Societies 176

8.3 Challenges in Incorporating the WEPs into Our Diet..... 177

8.4 Required Initiatives in Regard to Wild Edible Plants 178

Bibliography 181

Edible Wild Plants: An alternative approach to food security

Shaheen, S.; Ahmad, M.; Haroon, N.

2017, XVIII, 183 p. 107 illus. in color., Hardcover

ISBN: 978-3-319-63036-6