

Table of Contents

Table of Contents	iii
Foreword	vii
Preface	ix
Acknowledgments	xi
KEYNOTE PAPERS	1
The CGIAR System-wide Program on Integrated Pest Management: Initiation, Mission, Objectives, Governance and Activities <i>K.M. Makkouk</i>	3
Making an Economic Miracle: Agricultural Science, Technology, and Economic Growth <i>D. Gollin</i>	9
How Can Scientists and Scientific Programmes Connect with Public and Private Enterprise to Further the Cause of IPM <i>L. Brader</i>	17
Green Muscle, from Isolate to Commercial Product <i>C. Kooyman</i>	25
BIOLOGY, ECOLOGY & YIELD LOSS	37
Sunn Pest Status in Iraq <i>N.N. Hama, Z.A. Stephan, M.A. Ali and M.L. Aboud</i>	39
Sunn Pest Management in Romania <i>C. Popov, A. Brabulescu, F. Muresanu, S. Vasilescu, F. Gogu and I. Dobrin</i>	45
Sunn Pest in Central Asia: An Historical Perspective <i>G. Zharmukhamedova and A. Sarbaev</i>	61
Biology of <i>Aelia germari</i> Kuster in the Setif Area in Algeria <i>M. Bounechada and M. Fenni</i>	67
Biological Parameters of Sunn Pest in Wheat and Barley Fields in Northern Iraq <i>A.M. Amin, H.S. Al-Assadi and M.A.J. Al-Izzi</i>	71
Population Density of Sunn Pest during Hibernation and Aestivation in Northern Iraq <i>A.M. Amin, M.A.J. Al-Izzi and H.S. Al-Assadi</i>	79
Relationship between Weed Grasses and the Life Cycle of <i>Aelia germari</i> Kuster in the Setif High Plains (Northeast Algeria) <i>M. Fenni and M. Bounechada</i>	89
Sunn Pest Populations Under <i>Artemisia</i>, <i>Astragalus</i>, <i>Quercus</i> and <i>Centaurea gaubae</i> in Overwintering Sites <i>B.L. Parker, M. Amir-Maafi, M. Skinner and M. El Bouhssini</i>	93

Life History of <i>Eurygaster testudinaria</i> Geoffroy under Laboratory Conditions <i>J. Mohaghegh</i>	99
Life History and Reproductive Table of <i>Eurygaster maura</i> L. (Hemiptera: Scutelleridae) in the Laboratory <i>J. Mohaghegh</i>	103
A New Technique for Monitoring Sunn Pest <i>H. Adldoost</i>	109
Binomial and Sequential Sampling of Adult Sunn Pest, <i>Eurygaster integriceps</i> Puton <i>M. Amir-Maafi, B.L. Parker and M. El Bouhssini</i>	115
Determination of Fat Rate of Sunn Pest to Forecast Populations in Fields in Southeast Anatolia Region, Turkey <i>V. Karaca, E. Kiran, S. Fidan, M. Bashan, R. Canhilal and A. Demir</i>	123
Temperature and Rainfall: Critical Factors for Management of Sunn Pest in Overwintering Sites <i>M. Skinner, B.L. Parker, M. El Bouhssini, W. Reid and Z. Sayyadi</i>	127
α-Amylase Activity in Hibernating Sunn Pest <i>M. Kazzazi, A.R. Bandani, S. Hosseinkhani and A. Ashoori</i>	133
Degree Days for Forecasting Migration of Sunn Pest <i>M. Amir-Maafi, M. Majdabadi, F. Aghdasi, B.L. Parker and F. Parsi</i>	139
Chemical and Electrophysiological Studies on Sunn Pest <i>D.R. Hall, A. Cork, M.C.A. Downham, D.I. Farman, P.J. Innocenzi and M. El Bouhssini</i>	147
The Role of Vibratory Signals in Mating Behavior of Sunn Pest <i>S.V. Green, M.C.A. Downham, D.I. Farman, D.R. Hall and M. El Bouhssini</i>	157
Behavioral Responses of Sunn Pest to Volatiles from Conspecific Insects and Host Plants <i>S. Athanassios, M.C.A. Downham, D.I. Farman, D.R. Hall, S.J. Phythian and M. El Bouhssini</i>	167
The Impact of Sunn Pest Density on Grain and Flour Quality <i>F.J. El-Haramein, M. El Bouhssini, M. Amir-Maafi, R. Canhilal and H. Kutuk</i>	181
Damage Loss Assessment of Sunn Pest on Wheat in Turkey <i>R. Canhilal, H. Kutuk, M. Islamoglu, A.D. Kanat and A. Gul</i>	187
CHEMICAL CONTROL	191
Timing as a Tactic of Ecological Selectivity for Chemical Control of Sunn Pest <i>A. Sheikhi Garjan, A. Mohammadipour, Gh. Radjabi and Gh. Sabahi</i>	193
Properties and Regulation of Activity of Cholinesterases and Carboxylesterases on Sunn Pest <i>H. Kushiev, I. Allaeva and Z. Tilyabaev</i>	203
Aerial vs. Ground Applications for Sunn Pest Management <i>A. Erman, Y. Sabahoglu, N. Babaroglu and R. Canhilal</i>	209
Effects of Insecticides on Sunn Pest Egg Parasitoids, <i>Trissolcus grandis</i> Thomson and <i>T. semistriatus</i> Nees <i>M. Saber</i>	215

Chemical Control with Emulsifiables in Water using ULV Ground Applications <i>N.A. Al-Gamali and A.A. Al-Kafaji</i>	221
BIOLOGICAL CONTROL	225
Egg Parasitoids of Sunn Pest in Turkey: A Review <i>E. Koçak</i>	227
Progress in the Development of a Mycoinsecticide for Biological Control of Sunn Pest <i>S. Edgington, D. Moore, H. Kutuk, H. Satar and M. El Bouhssini</i>	237
Infectivity of <i>Steinernema feltiae</i> Filipjev (Rhabditida: Steinernematidae) to <i>Eurygaster maura</i> L. <i>E. Koçak, A. Gokce and I. Kepenekci</i>	245
Survey of Syrian Soils for Entomopathogenic Nematodes and Efficacy vs. Sunn Pest <i>M. Abdulhai, Z. Sayyadi, W. Reid and M. El Bouhssini</i>	251
The Present Situation of Some Alternative Hosts (<i>Dolycoris baccarum</i> L., <i>Piezodous lituratus</i> F.) of the Natural Enemies of Sunn Pest in Southeastern Anatolian Region of Turkey <i>A. Akkaya</i>	259
Role of Biocontrol Agents in Decreasing Populations of Sunn Pest in Northern Iraq <i>M.A.J. Al-Izzi, A.M. Amin and H.S. Al-Assadi</i>	265
Sunn Pest Overwintering Sites, Parasitoids and Effects on Cereal Lines and Varieties <i>A.F. Yildirim, E. Kinaci and M. (Elmali) Uysal</i>	273
Effect of Temperature on the Development, Reproductive Potential, and Longevity of <i>Trissolcus semistriatus</i> Nees (Hymenoptera: Scelionidae) under Constant Temperatures <i>S. Tarla and S. Kornosor</i>	279
Mass Production of Entomopathogenic Fungi for Biological Control of Insect Pests <i>N.E. Jenkins, B.S. Ali and D. Moore</i>	287
Mass Production and Storage of <i>Trissolcus grandis</i> (Thomson) (Hymenoptera: Scelionidae) <i>M. Kodan and M.O. Gurkan</i>	295
Mass Rearing of the Sunn Pest Egg Parasitoid, <i>Trissolcus grandis</i> Thomson (Hymenoptera: Scelionidae): a Demographic Framework <i>M. Amir-Maafi</i>	303
Survey of Egg Parasitoids of Sunn Pest in Northern Syria <i>A.N. Trissi, M. El Bouhssini, J. Ibrahim, M. Abdulhai and W. Reid</i>	309
Survey of Sunn Pest Adult Parasitoids in Syria <i>M. Abdulhai, R. Canhilal, M. El Bouhssini, W. Reid and F. Rihawi</i>	315
Entomopathogenic Fungi for Sunn Pest Management: Efficacy Trials in Overwintering Sites <i>M. Skinner, B.L. Parker, S. Gouli, W. Reid, M. El Bouhssini, M. Amir-Maafi and Z. Sayyadi</i>	319
SOCIOECONOMICS	329
Shifting from Aerial to Ground Spraying for Sunn Pest Control: Farmers' Perceptions and Problems <i>A. Gul, A. Aw-Hassan, H. Kutuk, R. Canhilal, A. Mazid, M. Hasani Moghaddam, H. Haj Hamoud and M. El Bouhssini</i>	331

Positive Effects of Commodity Exchanges in Sunn Pest Control in Turkey <i>A. Gul, A. Aw-Hassan, H. Isik, R. Canhilal, A.D. Kanat, A. Mazid and M. El Bouhssini</i>	341
Loss Assessment and Economic Levels for Sunn Pest in Qazvin Province, Iran <i>H. Nouri</i>	349
HOST PLANT RESISTANCE	355
Screening of Wheat Varieties in Nineveh Province, Iraq <i>S.I. Abdullah</i>	357
Evaluation of Wheat and its Wild Relatives for Resistance to Sunn Pest under Artificial Infestation <i>M. El Bouhssini, M. Nachit, J. Valkoun, M. Moussa, H. Ketata, O. Abdallah, M. Abdulhai, B.L. Parker, F. Rihawi, A. Joubi and F. Jaby El-Haramein</i>	363
Comparison of Resistance to Sunn Pest in Bread and Durum Wheat <i>M. Rezabeigi</i>	369
Host-Plant Preference of Developmental Stages of Sunn Pest in Wheat Cultivars <i>A. Arzani, A. Mohammadi and B. Hatami</i>	375
Development of an Efficient Wheat Genetic Transformation System for the Creation of Transgenic Wheat Resistant to Sunn Pest <i>V.S. Fadeev and A.K. Gaponenko</i>	381
The Effect of Starch Granule Size of Grain's Endosperm on the Resistance of Wheat Cultivars to Sunn Pest (<i>Eurygaster integriceps</i> Puton) <i>M. Rezabeigi, Gh. Radjabi and G. Nouri Ganbalani</i>	391
Conference Committees	399
Program of the 2nd International Conference on Sunn Pest, ICARDA, Aleppo, Syria, July 19-22, 2004	401
List of Participants at the 2nd International Conference on Sunn Pest, ICARDA, Aleppo, Syria, July 19-22, 2004	409
Index of Authors	425
Index of Scientific Names	427
Photos of External Morphological Difference Between Male and Female Sunn Pest	431
Photo of Where Not to Plant Wheat	432