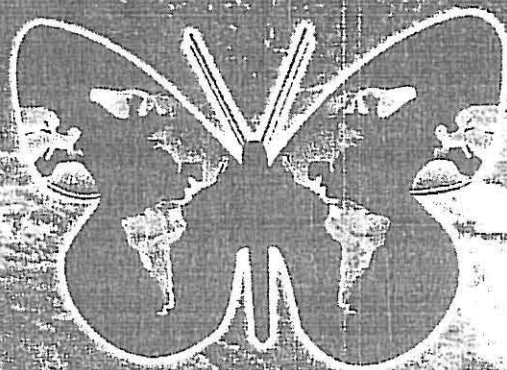


**Ministério
da Agricultura
e do Abastecimento**



**XXI
INTERNATIONAL
CONGRESS OF
ENTOMOLOGY**

XVIII Brazilian Congress of Entomology

August 20th to 26th

ABSTRACTS

The International Congress of Entomology is a joint promotion of:



Embrapa

Soja

BOOK II

[1485] FIELD SCALE RESPONSES OF APHIDS AND THEIR NATURAL ENEMIES TO ELEVATED CO₂ AND O₃

C.S. Awmack & R.L. Lindroth, Dept. of Entomology, University of Wisconsin-Madison, 1630 Linden Drive, Madison, WI 53706 U.S.A. E-mail: awmack@entomology.wisc.edu.

A key question in climate change research is the effects of environmental change on the population dynamics of insect pests and their natural enemies. Data collected so far suggest that chewing insects may be adversely affected by changes in plant quality caused by atmospheric pollutants while populations of sap-feeding insects may increase and cause more damage to their host plants. These studies have, however, been carried out using plants grown in pots in controlled environments, making it difficult to predict the probable effects of changes in atmospheric composition on populations of herbivores and their natural enemies. This talk will present data collected at the USDA FACTS II project in Rhinelander Wisconsin showing that there are effects of both CO₂ and O₃ on the performance of individual aphids, aphid populations and the natural enemy complexes associated with these aphids. Some aspects of individual aphid performance (development time, fecundity and intrinsic rate of increase) were not affected by elevated CO₂ or O₃ while adult weight and embryo number differed significantly between treatment. This uncoupling of fitness parameters has implications both for the effects of environmental change on aphid population dynamics and the ability of natural enemies such as ladybeetles and lacewings to control these populations. When populations of natural enemies were surveyed there were significant differences between the treatments, with more natural enemies at elevated CO₂ and fewer at elevated O₃.

Index terms: *Chaitophorus stevensis*, *Populus tremuloides*, climate change, CO₂, O₃.

[1487] STATUS OF BIOLOGICAL CONTROL OF THE CITRUS LEAFMINER (*PHYLLCYNISTIS CITRELLA*) IN ITALY

S. Barbagallo, S. Longo, G. Siscaro, P. Reina, L. Zappalà, Dip. di Scienze e Tecnologie Fitosanitarie, Sez. Entomologia agraria, Univ. of Catania - Via Valdisavoia, 5 - 95123 Catania, Italy, E-mail sebarbag@mbx.unict.it.

In Italy, as well as in other Mediterranean citrus areas, several species of indigenous eulophid wasps (mainly belonging to the genera *Cirrospilus* and *Phaenocarpa*) have been detected on *Phyllocnistis citrella* Stainton (Lep. Gracillariidae) since its first appearance in 1994. Because of the low efficiency of these indigenous entomophagous, a classical biological control program of the leafminer has been started in Southern Italy by means of the introduction of exotic parasitoids. *Ageniaspis citricola* Logvinovskaya (Hym. Encyrtidae), *Quadrastichus* sp. and *Citrostichus phyllocnistoides* (Narayanan) (Hym. Eulophidae) have been introduced and reared. Among these entomophagous, only *A. citricola* and *Quadrastichus* sp. have been also released in field during spring 1996 and fall 1997. Up to the end of August 1996 about 3,000 *Quadrastichus* sp. specimens have been distributed in more than 30 sites in Sicily. *A. citricola* was released, in the same island, in the provinces of Messina, Catania, Enna, Siracusa, Caltanissetta and Ragusa during May-July 1997; nearly 6,000 specimens of the encyrtid have been distributed in 44 sites from May to July 1997. Periodical observations have been carried out to verify the establishment of the parasitoids and detect some bio-ecological aspects of the introduced species. The eulophid *Quadrastichus* sp. reached parasitization levels near to 40% but it has not overwintered in any release site. *A. citricola* was recovered in some lemon orchards of the provinces of Catania and Messina, lying in more temperate climatic areas. During summer-fall 1997, in these biotopes the parasitization rates varied from 60% to 90%. *A. citricola* has overwintered in these sites and the strain recovered in 1998 is presently maintained in rearing. Further studies are still in progress to evaluate its permanent establishment in the area. In addition, during the same year (1998) the Australasian specific parasitoid *Semiolachter petiolatus* (Girault) (Hym. Eulophidae) has been recovered for the first time in many biotopes in Sicily and Calabria. This species has a particular ecological relevance, since the natural spreading of such an ectophagous wasp in the Mediterranean basin may efficiently improve the biological control of citrus leafminer.

Index terms: indigenous eulophids, *Ageniaspis citricola*, *Quadrastichus* sp., *Semiolachter petiolatus*, parasitoids.

[1486] PREDATION OF *DOCIOSTAUROS MAROCCANUS* BY ZOOPHAGOUS DIPTERA AND COLEOPTERA (SOUTHERN ITALY)

F. Baldacchino & T. Moleas, Dip. di Biologia e Chimica Agro-Forestale ed Ambientale, Università di Bari, v. Amendola 165/a, 70126 Bari, Italia.

The recent acrididae infestations reported from Apulia (Southern Italy), in some protected areas of 'Parco Nazionale del Gargano', have revived studies on the natural enemies of *Dociostaurus maroccanus* (Orthoptera, Caelifera). For carefully monitoring the infestations by this orthopteran, an environment-friendly control programme has been initiated, also including observations on ootheca predator insects. This preliminary work is aimed at reporting results obtained in the four-year period 1996-1999. In the first year of observations (1996), the presence of predators has not been reported. Conversely, since 1997, a few adults of the coleopteran *Mylabris variabilis* (Coleoptera, Meloidae) have been observed in some areas in May-July. In 1998, the presence and spread of this coleopteran increased. At the same time, the Diptera *Systoechus clenopterus* and *Cytherea obscura* (Diptera, Bombyliidae) have been reported since June. Observations carried out the same year have highlighted the progressive spread, even in new areas, of Meloidae and to a larger extent of the above Bombyliidae. The soil samples have revealed the presence of Meloidae larvae and in particular, those of Bombyliidae until May, in the empty oothecas of *D. maroccanus*. In 1999, it was observed that the Bombyliidae flight is longer although it starts later compared to Meloidae; indeed, Diptera adults were reported until late September. The effectiveness of these predators has proved to be very high also for the year 1999, in that they considerably destroy oothecas. In general, Bombyliidae larvae prevail (60% to 100%). This leads to assume a harmful effect of the chemical control, carried out to combat *D. maroccanus* from April to May, on the first adults of *M. variabilis*, which emerge since mid-May. In contrast, Bombyliidae would escape this effect because they emerge later.

Index terms: *Dociostaurus maroccanus*, predators, *Mylabris variabilis*, Bombyliidae.

[1488] DATA ON THE NATURAL CONTROL OF THE OLIVE MOTH, *PRAYS OLEAE*, BY PARASITOIDS IN TRÁS-OS-MONTES REGION (NORTHEASTERN PORTUGAL)

A. A. Bento¹, L. M. Torres² & J. A. Pereira¹, ¹ Escola Superior Agrária de Bragança, Quinta de Sta Apolónia, Apartado 172, 5 301 - 855 Bragança, bento@ipb.pt. ² Universidade de Trás-os-Montes e Alto Douro, Apartado 202, 5 000 - 911 Vila Real, ltorres@utad.pt. This work was supported by the Project PAMAF IE&D 6117.

A study was carried out over the period of 1996 to 1999 in unsprayed olive groves at Trás-os-Montes region (northeastern Portugal) in order to identify the parasitoid complex of the olive moth, *Prays oleae* (Bern.) and to evaluate its role to control the pest. The study fell upon the last immature stage of development, of each of the three generations of *P. oleae*, that is phytophagous, antophagous and carpophagous. Eight species of hymenoptera parasitoids were identified, namely: *Ageniaspis fuscicollis* Dalm. var. *praysincola* Silv. (Encyrtidae), *Chelonus eleaphilus* Silv. (Braconidae), *Apanteles xanthostigmus* Hal. (Braconidae), *Habrocon crassicornis* Thoms (Braconidae), *Elasmus flabellatus* Fonsc. (Elasmidae), *Angitia armilata* Grav. (Cecumonidae), *Phaenocarpa mediterranea* Ferr. & Del. (Eulophidae) and *Diadocerus westwoodi* West. (Eulophidae). The level of parasitism recorded varied from 7.4% to 46.7% in the phytophagous generation, from 25.4% to 56.5% in the antophagous generation, and from 21.3% to 61.9% in the carpophagous generation. *A. fuscicollis* var. *praysincola*, *C. eleaphilus* and *A. xanthostigmus* were the most frequent species observed, being present in all the samples. These species were also, in general, the ones which presented the highest levels of parasitism, with numbers between 5.5% and 55.2% for *A. fuscicollis* var. *praysincola*, between 0.2% and 14.2% for *C. eleaphilus*, and between 1.4% and 11.6% for *A. xanthostigmus*.

Key-words: olive; integrated pest management; *Prays oleae* (Bern.); natural control; *Ageniaspis fuscicollis* Dalm.