



**SCYPHOPHORUS ACUPUNCTATUS (COLEOPTERA:
CURCULIONIDAE) ATTACKING POLIANTHES
TUBEROSA (LILIALES: AGAVACEAE) IN MORELOS,
MEXICO**

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**SCYPHOPHORUS ACUPUNCTATUS (COLEOPTERA: CURCULIONIDAE)
ATTACKING POLIANTHES TUBEROSA (LILIALES: AGAVACEAE)
IN MORELOS, MEXICO**

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Tuberose, *Polianthes tuberosa* L. (Liliales: Agavaceae), is grown as an ornamental plant and as a source of a fragrant essence for perfumes (Gonzatti 1981, Watson & Dallwitz 1992). It has been grown commercially in the state of Morelos, Mexico, for 60 years. Currently there is grown approximately 300 cultivated ha, which generates US \$6,300,000 per year (Uribe 2000). However, in recent years, producers have noticed severe damage caused by an insect that they call black weevil but unidentified scientifically. The objective of this work was to identify the pest and to assess damage.

The study was carried out in the central Mexican state of Morelos, between 18°22'19" and 19°07'10" north and between 99°30'8" and 19°07'10" west. Mean annual temperature is 20°C and the annual rainfall ranges from 900 to 1100 mm (García 1981). Samples were collected from March to September 2000 in the main areas of tuberose production to include: the municipalities of (1) Tepalcingo, (2) Emiliano Zapata, and (3) Coatlán del Río.

In the first two municipalities, 100 bulbs of *P. tuberosa* were collected, whereas in the third, 120 plants were collected. A 1-ha plot in each municipality was selected, and samples were taken from the center and four sides of the plot. In the laboratory, bulbs and whole plants were examined for insects. The insect larvae and adults were deposited in 70% ethanol and processed for identification (see acknowledgments).

The weevil was identified as *Scyphophorus acupunctatus* Gyllenhal (Coleoptera: Curculionidae) (Muñiz 2000, Marín 2000, Nápoles & Equihua 2000). Most damage is caused by weevil larvae mining the bulb. The samples from Coatlán del Río

had the highest incidence of damage (69%). Emiliano Zapata and Tepalcingo demonstrated 47 and 37% damage, respectively (Table 1).

This paper is the first formal report of *S. acupunctatus* attacking tuberose. Vaurie (1971), in her revision of *Scyphophorus*, did not mention tuberose as a host plant of *S. acupunctatus*. Dampf mentioned the weevil as "acapiche del nardo" (Anonymous 1930). Vaurie (1971) mentions that this insect is distributed from the southern USA to the north of South America, the Caribbean (Cuba, Hispaniola, and Jamaica), East Africa, Hawaii, Java, and Australia. In Mexico it has been reported attacking several economically important plants of the family Agavaceae (McGregor & Gutiérrez 1983). In the Yucatán peninsula it has been mentioned as causing damage up to 50% in the cultivation of henequen (*Agave fourcroydes* Lem.) (Ramírez-Choza 1979). In the states of Hidalgo, Tlaxcala, and México, it has been reported causing damage of 30% to the cultivated plant "maguey pulquero" (*Agave salmiana* Salm-Dyck ssp. *crassisipina* (Trel.) Gentry and var. *culta*) (Ruvalcaba 1983). In the state of Jalisco, it caused damage of 10% to "agave tequilero" (*Agave tequilana* Weber var. *azul*) (Valenzuela 1994). In the municipalities of Tepalcingo and Coatlán del Río, cultivation of *A. tequilana* began three years ago, whereas in Emiliano Zapata there are wild agaves, predominantly *A. angustifolia* Haw., in the hills near cultivated *P. tuberosa*. These two agaves may serve as refuge to *S. acupunctatus* during chemical applications or when tuberose is not in the field, so control is complicated (Uribe 2000). Infestations in *Agave tequilana* var. *azul* have been reported as from 4 to 24 weevils per plant (Solis et al. 1999). The present survey showed 6-10 larvae per in-

TABLE 1. INFESTATION OF *S. ACUPUNCTATUS* IN *P. TUBEROSA* IN MORELOS, MEXICO (MARCH TO SEPTEMBER 2000).

Locality and date	Bulbs sampled/infested	Plants sampled/infested	Adults/plant	Percent infested
Tepalcingo 6 March	100/36	—	—	36
Emiliano Zapata 7 April	100/47	—	—	47
Tepalcingo 30 August	45/14	—	—	40
Tepalcingo 6 September	120/42	—	—	35
Coatlán del Río 5 September	—	120/83	4-36	69

fested bulb and 4-36 adults per infested plant. *S. acupunctatus* is a severe pest of tuberose. Our work continues on *S. acupunctatus* life cycle, population dynamics, identification and evaluation of feeding attractants.

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SUMMARY

Scyphophorus acupunctatus is reported attacking *Polianthes tuberosa* in Morelos, Mexico. All growth stages (eggs, larvae, pupae and adults) of this insect were collected. The average percent infestation was 51%.

This paper is in memory of Dr. Mario Camino Lavín.

REFERENCES CITED

- ANONYMOUS. 1930. Principales plagas y enfermedades de los cultivos en la República Mexicana, incluyendo las más importantes de los Estados Unidos de Norteamérica. Oficina Federal para la Defensa Agrícola, México. 195, 159, 220.
- GARCIA, E. 1981. Modificaciones al sistema de clasificación climática de Köppen. Instituto de Geografía, Universidad Nacional Autónoma del Estado de México. Offset Larios; México, D.F., Mexico.
- GONZATTI, C. 1981. Flora Taxonómica Mexicana II. Cenetix; Guadalajara, México (see pp. 87-88).
- Μαρτιν, J. A. 2000. Personal communication. INIFAP-SAGAR, Celaya, Guanajuato, México.
- MCGREGOR, R., AND O. GUTIERREZ. 1983. Guía de insectos nocivos para la agricultura en México. Alhambra; México. 166 pp.
- MUÑIZ, R. V. 2000. Personal Communication. Sanidad Vegetal, INIFAP-SAGAR, México.
- NAPOLES, R. J., AND A. EQUIHUA. 2000. Personal Communication. Colegio de Posgraduados, Instituto de Fitosanidad, Montecillo, Estado de México, México.
- RAMIREZ-CHOZA, J. L. 1979. Metodología para el control del max del henequén *Scyphophorus acupunctatus* bajo condiciones de campo como resultados de tres años de estudio. Fol. Entomol. Mexicana 42: 62-63.
- RUVALCABA, J. M. 1983. El maguey manso. Universidad Autónoma Chapingo; México. 122 pp.
- SOLIS, A. J., H. H. GONZALEZ, F. F. MENDOZA, S. M. CABRERA, H. E. CALDERON, A. VALLE DE LA PAZ, M. A. EQUIHUA, L. J. VAZQUEZ, AND M. A. GARZA. 1999. Insectos asociados con *Agave tequilana* var. azul, en cinco localidades de Jalisco, México. Memorias XXXIV Congreso Nacional de Entomología, Aguascalientes, México, 23-26 May 1999: 455-457.
- URIBE, L. R. 2000. Personal communication. Presidente de la Unión de Productores de nardo del Estado de Morelos. Coatlán del Río, Morelos, México.
- VALENZUELA, Z. A. G. 1994. El agave tequilero. Litteris; México, D.F., México (see pp. 121-137).
- VAURIE, P. 1971. Review of *Scyphophorus* (Curculionidae: Rhynchophorinae). Coleopt. Bull. 25: 1-8.
- WATSON, L., AND M. J. DALLWITZ. 1992. The families of flowering plants: descriptions, illustrations, identification, and information retrieval. [Online] Available: <http://biodiversity.uno.edu/delta/> (4 November 2000).