An Advanced Treatise On Meloidogyne

RESEARCH/INVESTIGACIÓN

PROSPECCIÓN FITONEMATOLÓGICA EN VIÑEDOS DEL VALLE DE GUADALUPE, B.C. MÉXICO

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ABSTRACT

Cuenca-Condoy. M., N. Marbán-Mendoza, M. Vargas-Hernández, and A. Rebollar-Alviter. 2012. Survey of Plant-parasitic Nematodes in Vineyards in Valle de Guadalupe, B.C. Mexico. Nematropica 42:26-33.

A survey to detect the presence of plant-parasitic nematodes in vineyards (*Vitis vinifera* L.) was undertaken in Valle de Guadalupe (654.64 ha) on 25 varieties of quality-wine grapevines, on 14 farms. Soil and root samples were collected during three months in 2010. Nematode genera and the three most frequent species of nematodes were identified. Percent of root galling and soil clay content were also measured. Data were analyzed using the generalized linear mixed model and descriptive statistics, while relationships among the nematode genera were described using Norton's prominence value. Eleven genera of plant-parasitic nematodes were found, but only four were considered to be highly pathogenic to the crop: *Meloidogyne, Tylenchulus, Pratylenchus* and *Trichodorus*. The most abundant nematode genera were *Meloidogyne* and *Aphelenchus,* with 44.35% and 22.61% relative frequency, respectively. *Meloidogyne arenaria, M. incognita* and *M. javanica* induced over 80% root galling. Grapevine var. Gamay was the most susceptible variety. Ways of improving the survey are discussed, and variables that may better explain nematode distribution are suggested.

Key words: Meloidogyne arenaria, M. incognita, M. javanica, root galling, *Vitis vinifera* L. prominence value.

RESUMEN

Cuenca-Condoy. M., N. Marbán-Mendoza, M. Vargas-Hernández, and A. Rebollar-Alviter. 2012. Prospección Fitonematológica en viñedos del Valle de Guadalupe, B.C. Mexico. Nematropica 42:26-33.

Se realizó una prospección de nematodos fitoparásitos en viñedos (*Vitis vinifera* L.) del Valle de Guadalupe (654.04 ha) en 25 variedades de vid para vino de calidad en 14 ranchos. Se recolectaron muestras de suelo y raíces durante tres meses en el 2010 (época de brotación), se identificaron los géneros de nematodos y las tres especies de nematodos de mayor frecuencia; y se midió porcentaje de agallamiento y el porcentaje de arcilla en el suelo. Los datos se analizaron mediante el modelo lineal generalizado mixto así como con estadística descriptiva, mientras que la relación entre los géneros de nematodos se calculó a través del valor de importancia. Se detectaron once géneros de nematodos fitoparásitos, de los cuales solo cuatro se consideran altamente patogénicos al cultivo de vid: *Meloidogyne, Tylenchulus, Pratylenchus* y *Trichodorus*. Los géneros predominantes fueron *Meloidogyne* y *Aphelenchus* con 44.35% y 22.61% de frecuencia relativa, respectivamente. Las especies *Meloidogyne arenaria, M. incognita* y *M. javanica* ocasionaron daños a las raíces con porcentaje de agallamiento mayores al 80%. La variedad de vid Gamay fue la más susceptible. Se discute el mejoramiento del muestreo y variables que podrían explicar con mayor precisión la distribución de los nematodos.

Palabras clave: Agallamiento, *Meloidogyne arenaria, M. incognita, M. javanica, Vitis vinifera* L, valor de importancia.

INTRODUCCIÓN

La importancia de conocer la población de nematodos en el cultivo de vid (*Vitis vinifera* L.) se debe al efecto de los mismos en la disminución de la producción, la difícil erradicación de estos patógenos en el cultivo establecido y además al alto valor económico de las plantas en los viñedos de variedades para producción de vino. Estadísticas del Servicio de Información Agroalimentario y Pesquero (SIAP, 2010) indican la participación durante el año 2009 del Valle de Guadalupe en la superficie sembrada con vid en 3,609.5 ha. Estos valores representan porcentajes importantes en el sector a nivel estatal (Baja California) y nacional 84.4% y 12.8%, respectivamente.

Un factor importante que impacta la producción

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