

## EFFECT OF EXPOSURE TO P,P' DDE ON MALE HORMONE PROFILE IN MEXICAN FLOWER GROWERS OF STATE OF MEXICO AND MORELOS

Julia Blanco Muñoz, *Instituto Nacional de Salud Pública, Mexico*

Marina Lacasaña, *Escuela Andaluza de Salud Pública, CIBERESP, Spain*

Clemente Aguilar Garduño, *Escuela Andaluza de Salud Pública, CIBERESP, Spain*

Miguel Rodríguez Barranco, *Escuela Andaluza de Salud Pública, Spain*

Susana Bassol, *Universidad Autónoma de Coahuila, Mexico*

Mariano E. Cebrián, *Centro de Investigación y Estudios Avanzados, Mexico*

Inmaculada López Flores, *Escuela Andaluza de Salud Pública, CIBERESP, Spain*

**Background and Aims:** *p,p'*-dichlorodiphenyldichloroethene (*p,p'*-DDE) acts as an androgen receptor antagonist, (Kelce et al 1995), however the data regarding its hormonal effects in men are limited. The objective of this study was to evaluate the association between serum levels of *p, p'*-DDE and reproductive hormone profile in male flower growers of Mexico.

**Methods:** A longitudinal study was carried out in a population of men working in the production of flowers and ornamental plants in two Mexican states (Morelos and State of Mexico) during the periods July-October 2004 (rainy season) and December 2004-May 2005 (dry season). A questionnaire including information on their socioeconomic characteristics, tobacco and alcohol use, presence of chronic and acute diseases, occupational history and anthropometry was used and blood and urine samples were obtained. Serum levels of *p, p'*-DDE were analyzed by gas chromatography; FSH, LH, testosterone, estradiol, inhibin B and prolactin levels were measured by enzymatic immunoassay. We also analyzed urinary levels of dialkylphosphates (DAPs) by gas chromatography. Associations between serum levels of *p, p'*-DDE and male reproductive hormones (both transformed to their natural logarithm) were evaluated using multivariate generalized estimating equation (GEE) models.

**Results:** The median *p,p'*-DDE levels was 678.2 ng/g lipid (range: 9.4-12696.5) during rainy season and 626.7 ng/g lipid (range: 9.4-13668.1) during dry season. After adjusting for potential confounders (age, body mass index, state of residence and DAPs), *p, p'*-DDE levels were negatively associated with prolactin ( $\beta=-0.04$ , CI 95% -0.07, -0.008) and testosterone ( $\beta=-0.04$ , CI 95% -0.08, 0.005) and positively with inhibin B ( $\beta=0.11$ , CI 95% 0.02, 0.21).

**Conclusions:** These results provide additional support for that *p, p'*-DDE can affect hypothalamo-pituitary-gonadal axis function in humans.

**References:** Kelce WR, Stone CR, Laws SC, Gray LE, Kemppainen JA and Wilson EM. Persistent DDT metabolite *p,p'*-DDE is a potent androgen receptor antagonist. *Nature* 1995;375:581-5.