Biological Problems and Their Management in Urban Soils: Integrated Pest Management of Arthropods and Diseases

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"IPM stresses holism, utilizing agroecological principles but translating them into a socio-economic framework which stresses human resources development" (Teng & Savary, 1992).

Approximately 1.0 million arthropods on earth have been described and named (Wilson, 1988). Some scientists estimate the total at 10 to 30 million species (Erwin, 1991). Roughly, 1350 arthropod species are pests of any consequence in the USA, and many of these pests have been introduced from other continents, particularly Europe (Sailer, 1983). Why do a few arthropods continue to be pests when thousands of others are considered harmless?

According to a recent survey, nearly 18 million American households spent $13.4 billion on professional lawn and landscape services in 1994 (Anonymous, 1995). From another survey 75 million Americans participated in one or more types of lawn and garden activities in 1990 (Butterfield, 1991). Thus, a major and growing portion of urban America is directly interacting with the environment. The positive and negative implications of this interaction remain to be defined. Clearly, a need exists for information and knowledge from involved professionals. As in any environment, urban soils play a pivotal role. Direct impact from construction, gardening and lawn care are of obvious importance, but indirect effects from above-soil activities involving landscaping, pest management or other aspects of urban living are of equal importance. Above-soil arthropod pest management will be the focus of this first section.

Many political, social, regulatory and environmental issues dramatically impact the way pest management is conducted. Two examples: President Clinton has called for implementation of integrated pest management (IPM) on 75% of crop acreage by the year 2000 and the Food Quality Protection Act of 1996. In a recent survey of consumers using plant tags, fewer then 10% had heard of IPM (Mizell et al., 1996).