

## HUMAN AND ENVIRONMENTAL FACTORS AFFECTING THE COMPOSITION OF AGROBIODIVERSITY IN CUBAN HOME GARDENS

**Z. Fundora Mayor, L. Castineiras, T. Shagarodsky, V. Moreno, O. Barrios,  
L. Fernandez & R. Cristobal**

Instituto de Investigaciones Fundamentales en Agricultura Tropical “Alejandro de Humboldt” (INIFAT)  
Calle 1, esquina a 2, Stgo. De las Vegas, Boyeros, Cuba. CP: 17200

There are several factors that influence the composition of the species and infraspecific diversity in Cuban home gardens, or “conucos.” Aspects such as culture, climate, socio-economic status and politics are the main influences on the diversity present in home gardens. Among the most important aspects are human actions and decisions. Conucos were surveyed in the three major geographic regions of Cuba. In all regions the coexistence of wild species and weeds have been noted growing together with the cultivated varieties, as in the case of *Capsicum frutescens*. In many cases the wild or weedy varieties are at first “tolerated” and then, if found useful, “managed” to a certain degree. It can be seen that approximately 50% of the species and/or cultivars originate outside the home gardens. Interviews conducted with farmers confirm the ample exchange of genetic materials between the gardens and its surroundings. The most frequent source of germplasm is from close family and neighbours, and to a lesser extent from the formal sector (Ministry of Agriculture or scientific institutions). Once the reproductive material has obtained, the farmers show great interest in reproducing their own seed (in approximately 80% of the cases). The remainder correspond to those types which self-seed (weeds), or which are useful wild species, or which must be bought because seed can not be reproduced in our country, such as cabbage (*Brassica oleracea*) or beetroot (*Beta vulgaris*). Climatic factors, such as prolonged droughts, hurricanes and strong winds, can prevent flowering and destroy crop populations. Topographic factors such as altitude negatively influence the number of fruit species managed by farmers ( $r=-0.51$ ), due to the presence of mists at high elevations. Altitude, however, has a positive effect on roots and tubers ( $r=0.45$ ), medicinal species ( $r=0.37$ ), grains ( $r=0.35$ ) and seasonings ( $r=0.41$ ) due to the high rainfall that occurs in those home gardens. No defined tendency was observed in the total number of species in relation to altitude. Home garden owners with the high levels of education tend to cultivated a greater number of species, suggesting that the farmer are capable of perceiving greater benefit through managing a greater number of species. Cuban farmers easily adopt new technologies and new species or varieties. There is also a positive tendency in the relationship between increased time dedicated to home garden care and the total number of managed species; increased labor also tends to increase the number of categories of use. Pests and diseases sometimes cause farmers to change the composition of the managed diversity, especially when they are causing serious crop damage. One example is the case of *Thrips palmi*, which attacks a wide range of species that are of importance to the households. Finally, agrarian and environmental policies can affect the dynamics of the Cuban “conuco”, either by promoting or constraining the presence of wide diversity in the home garden. Despite policies that have not favored crop genetic diversity in field crops, diversity in Cuban home gardens remains quite stable over time, because they are essential to the livelihood of the owners.