



Simposio de Recursos Genéticos para América Latina y el Caribe

***"Por la valoración de los Recursos Genéticos para el
Desarrollo Sustentable en América Latina y el Caribe"***

MEMORIA



GENE FLOW EVENTS IN NATURAL COMPLEXES OF *Phaseolus lunatus* FROM MEXICO AND PERU

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Gene flow events in natural populations of Lima beans have been reported along its broad distribution in the Americas, as a result of its facultative reproduction system that allows varying levels of allogamy up to 48%. We were interested to evidence gene flow events using weedy materials from six populations of Campeche (Mexico) and ten populations from Cajamarca (Peru).

The participation of nuclear genome was evaluated through 18 SSR *loci*, and lectin patterns. The direction of the gene transfer was established with 25 non-coding regions of chloroplast DNA using RFLPs-PCR. In addition, the concentration of HCN has been evaluated as an antinutritional compound in order to assess some consequences of gene flow in these populations.

The biochemical and molecular characteristics of the weedy materials indicated that they were indeed hybrids between cultivated and wild forms. Specific SSR alleles were found in each biological form among both gene pools and these were shared by weedy materials. In relation to the direction of gene transfer, the main direction in the Mesoamerican gene pool was that of wild pollen towards cultivated forms in contrast with the Andean gene pool, where the main direction was from cultivated to the wild form. A higher HCN concentration was found in wild types as compared to the cultivated forms, and intermediate levels in weedy forms were exhibited in both gene pools as well as the absence of relation of the color of seed testa with the cyanide content. The separate events of domestication affecting both gene pools evidenced elsewhere have been confirmed by our study, also in relation to the concentration of HCN and patterns of lectins displayed by wild and cultivated forms.