

Taxonomic Investigations of an Unknown Accession of Lotus sp.*

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A large seeded introduction of birdsfoot trefoil, PI 332921, was tentatively identified by the USDA Plant Introduction Station as a Lotus tenuis (MO accession number 266). It has an average 100 seed weight of 2 to 3 times that of other birdsfoot trefoil cultivars. Large seed size is reported to be associated to seedling vigor and entry 266 may prove to be a valuable genetic source to improve birdsfoot trefoil seedling vigor.

Entry 266 was morphologically, karyotypically, and idiographically compared to 4 randomly chosen L. tenuis introductions and 2 L. corniculatus cultivars grown in greenhouse and field environments. Results indicated that the L. tenuis entries had somatic chromosome numbers of $2n=12$. The L. corniculatus cultivars were found to have somatic chromosome numbers of $2n=24$. Both species conformed to several taxonomic keys based on morphological characters including leaf length, width, area, and length/width ratio. Entry 266 was found to also have a somatic chromosome number of $2n=24$. It consistently exhibited low morphologic expression of the measured leaf characters. Additionally, a high degree of leaf pubescence was observed with entry 266.

The exclusive classification of entry 266 as a L. tenuis or L. corniculatus was not possible due to similarities of 266 to both species. Entry 266 had a karyotype and idiogram similar to the L. corniculatus cultivars and a total chromosome length similar to hypothetically induced autotetraploids of the L. tenuis entries. The morphological and cytological characters studied in this investigation did not disprove the identity of 266 as a L. tenuis. Entry 266 is hypothesized to be an autotetraploid of L. tenuis ($2n=4x=24$).

* Progress Report, Clovers and Special Purpose Legumes Research 16: 51, 1983.