Proceedings of the XLIX Italian Society of Agricultural Genetics Annual Congress
Potenza, Italy – 12/15 September, 2005
ISBN **88-900622-6-6**

Poster Abstract - C.30

PROGRESS IN BREEDING FOR INNOVATIVE CHARACTERS IN MEDITERRANEAN GRAIN LEGUMES

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Faba bean, lentil, blue lupine, breeding, innovative characters

In 1993 the Authors started a large programme of collection of germplasm and of breeding for introducing several innovative characters into locally adapted varieties and populations of several Mediterranean grain legume species, for both human and animal utilization: faba bean, lentil, chickpea, white lupine, blue lupine, grasspea. In the present contribution are reported up to date results obtained in faba bean, lentil and blue lupine.

In faba bean the important characters introduced into *minor, equina* and *maior* types were: ”close flower” and “self fertility”, inducing strict autogamy and normal productivity; “pure white flowers” and “white hylum”, associated with absence of tannins in the plant and seeds; different seed sizes and *testa* seed colours; high fertility and productivity. Strict autogamy could be considered a new domestication character of high value for breeding and seed production of the species which normally has a large amount of natural cross pollination.

In lentils the characters introduced were: “white testa colour of the seed” due to absence of tannins; “ orange colour of cotyledons”; “high earliness” and “standing ability” of the plant; all in lines with different seed size.

In blue lupine the programme included the selection of most productive and adapted wild types collected in the Lazio region (2 lines out of 34 different accessions analyzed, donors of high central Italy adaptability). These 2 lines were crossed with domesticated cv developed in Australia and Poland and in the following generations were recovered all the most important domestication characters (“white flower”, “white seed coat”, “pod indehiscence”, “non hard seed”, “large seed size”, both “indeterminate” and “determinate” plant habit, “absence of bitter antinutritional factors” in the plant and in the seed, “cold tolerance” for fall seeding, high fertility and seed production.

In all 3 species several selected lines are now under multiplication and analyses of production potential are now conducted , before their release.