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# A BREEDING PROGRAM FOR TRANSFERING USEFUL GENES IN COMMON VETCH (*VICIA SATIVA* L.)

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*Vicia sativa, breeding, subterranean seeds*

Common vetch is an annual forage legume, present in Southern Europe and in the Mediterranean region. Among the forage legumes, vetch is important because it is well adapted also to semi-arid lands, allowing good production of good quality forage biomass with low inputs. Although several Italian regions present favourable conditions for vetch cultivation, the area under cultivation is limited and the seed production is not enough to meet our Country needs. For this reason seeds of vetch are mainly imported from Spain, Turkey and Australia.

A particular type of common vetch (*Vicia sativa* var. *subterranea*), diffused in semi-arid regions of South Italy, and Near East, presents an interesting monogenic recessive character: the development of short subterranean rhizomes, carrying apical subterranean flowers, pods and normal seeds.

This character has been likely selected naturally in overgrazing areas, as an important surviving factor (present also in some *Lathyrus* species). Our aim is to transfer the subterranean seed production character in lines of *Vicia sativa* subsp. *sativa* characterized by good quality and high biomass production, the already selected pod indehiscence, facilitating seed harvesting and good epigeal seed production and absence of an anti-nutritional factor (cyano-alanine). The addition of subterranean seed character in improved *Vicia sativa* cultivars would induce a natural re-seeding in permanent pasture areas, substituting the need, eventually in association with a perennial grass or cereal, of the annual seeding of mixtures of annual forage cereals with an annual forage legume.