



"Novel rapeseed and sunflower germplasm and alternative oilseed crops to cope with climate change and improve edible oil's food security in Morocco"

Abdelghani Nabloussi

Abstract

Morocco is suffering a food security problem in edible oils. The overall national production, including olive and oilseed crops, does not exceed 20% of the needs. The gap is covered by importation which has negative repercussion on the national economy and food security. Oilseed crops yield will further decrease in the future as was demonstrated by a Worldbank study on effect of climate change on agricultural production in Morocco. Nowadays, there is a political will to promote and develop oilseed crops to improve the farmers' income and to ensure edible oil food security by increasing national oilseed production. In this context, The INRA, as public research institution, is committed to play a role through adaptive and prospective research strategy, including genetic approach. Agriculture constraints, mainly climate change occurring in Morocco, will aggravate drought and heat stress in the future. Therefore, farmers need to cultivate adapted sunflower and rapeseed varieties as well as alternative crops that are more resistant/tolerant to these abiotic stresses. Diversification and development of adapted and resilient oilseed crops and the adoption of a wide range of cultivars are of paramount importance to cope with climate change and to enhance food security.

Regarding the crops already cultivated in Morocco, international germplasm introductions as well as mutagenesis breeding program were carried out for rapeseed to broaden the existing genetic variability. As a result, novel promising germplasms were obtained and selected. These showed a significant genetic gain, compared to the existing varieties, under contrasted environmental conditions, mainly for phenological and agronomic traits, i.e. flowering earliness and seed yield.

Besides, other crops such as safflower, Indian mustard and Ethiopian mustard were introduced as alternative oilseed crops being more drought and heat tolerant than sunflower and rapeseed. They will be useful and beneficial in environments cropping system where cereals are generally grown in monoculture or in rotation with fallow, mainly in semiarid areas. The first field trials showed their good adaptation to our local environmental conditions.