PhD Thesis Defense

Valeria Cafaro (XXXVI cycle)

Will discuss her PhD thesis titled

Selection of a Ricinus communis *L. genotype and improvement of the agronomic management in semi-arid Mediterranean environment*

On **Tuesday December 19th 2023 at 10am** at the Direction Meeting room, Via Santa Sofia 100.

Abstract

The current world scenario is characterized by an extreme climate crisis, a response to the overexploitation of natural resources. Greenhouse gas emissions, agricultural intensification, population growth, and demand, accentuate severe climate change. To overcome these increasing problems, the use of fossil fuels must be reduced to a minimum, and the enhancement of energy crops becomes a valid solution to the request of obtaining renewable energy. In line with European policies, such as the Agenda 2030, and the Renewable Energy Directive (RED), aiming to increase the energy independence of the European Union and the obtainment of 'clean and green energy', the production of biofuels is a valid alternative to meet these ambitious goals. In this context, the adoption of crops, cultivated in marginal lands, which does not compete with food production, and the possibility of exploiting these degraded areas, become one of the main topic on which to focus for further scientific research. Within this framework, the present thesis focused on the selection and the improvement of the agronomic management of castor (*Ricinus communis* L.) in order to assess the adaptability and potentiality of this crop in the Mediterranean region. Specifically, the research activities attempt to: (i) review the current knowledge on the adaptation capacity of castor in the Mediterranean environment; (ii) select a local genotype adapted to the Mediterranean climate; (iii) study of the germination temperature requirements of local and dwarf genotypes of castor; (iv) evaluation of the response to salinity stress in the germination of different castor seeds; (v) assess the best sowing date and comparison between the local genotype and dwarf hybrids. Overall, the present research highlighted the best combination between genotypes and environment of cultivation, in relation to temperature and salinity. These results can provide a valid base for further studies and for the exploitation of castor in the Mediterranean.

Prof. Angela Roberta Lo Piero

Prof. Danilo Scordia