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PROGRAM

CAMELINA A CASH COVER CROP FOR THE MEDITERRANEAN REGION: PRELIMINARY RESULTS FROM THE 4CE-MED PROJECT

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Mediterranean dry-farming systems mostly rely on cereal production (mainly wheat (*Triticum aestivum* L.) and barley (*Hordeum vulgare* L.)), often as sole crops, due to a lack of alternatives. In this scenario, winter camelina (*Camelina sativa* L. Crantz) has been recently identified as a suitable alternative as a cash cover crop to be grown in northern USA, in relation to its short cycle, and ability to grow also on marginal soil. Nevertheless, the inclusion of spring camelina, as a cash cover crop, within conventional Mediterranean farming systems, will be also possible matching the environmental benefits, related to its cover crop “attitude”, and additional revenue for farmers, who will get profit from selling camelina seeds for oil and protein. At this scope, in the framework of the 4CE-MED project, funded by the PRIMA program, among concurrent cover crops, spring camelina was chosen as the most suitable for the Mediterranean climate, being extremely drought tolerant, suitable to different sowing times, and able to improve soil and water conservation among smallholders. With the scope to identify the most suitable camelina variety for different Mediterranean countries, a screening trial was established in autumn 2020 in seven countries (i.e., Algeria, France, Greece, Italy, Morocco, Spain, and Tunisia), at one or two locations in each country. The different camelina varieties were all supplied by Camelina Company (Spain), and they were selected to better match the climatic peculiarities of each test site. At all locations six different camelina varieties were compared. Three varieties (CCE26, CCE29, and CCE42) were in common to all the locations, then in Algeria, Tunisia, Morocco and Spain the varieties CCE43, CCE44, and CCE117, characterized by prolonged vegetative cycle and late maturity, were also grown; while in Greece, Italy and Southern France the extra varieties were CCE27, CCE34, and CCE40, characterized by shorter vegetative cycle and early maturity, possibly enabling double cropping in these countries. Sowing times were adjusted to optimize camelina growth cycle, in relation to local conditions, and to promote its cover-crop attitude. Camelina sowing ranged between end of October (Italy) until end of December (Morocco), while harvesting started in early May in the African countries (Morocco and Tunisia) and it end at the end of June in some of the European ones (i.e., France). In order to collect a common set of data, during camelina development and at harvest, the 4CE-MED partners agreed to survey: emergence rate, days to flowering and maturity, height at maturity, plant density at harvest, seed yield, thousand seed weight, seed oil content, and fatty acid profile. Besides being the first time ever that camelina is grown across such a different number of Mediterranean pedo-climates, from the preliminary results it is possible to highlight how this oilseed crop adapted well to all conditions. Also, in the African countries, where 4CE-MED partners were completely new to camelina, the results are very promising and camelina confirmed its wide environmental suitability and capacity to adapt also to sub-Saharan climate. In the next months the surveyed parameters will be analyzed in order to define the differences between the considered varieties in response to different environments.

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