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FREQUENCY MAP OF MONTHLY REFERENCE CROP EVAPOTRANSPIRATION (ET_o) ON THE COASTAL PLAINS OF SOUTHERN ITALY

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SUMMARY

The complex orography of the territory required the use of the historical series of 267 stations, only 54 of which provided all the observations needed to calculate ET_o with the combined formula chosen. The remaining stations provided only data on temperature (and rainfall).

In order to overcome this shortage, the following steps were taken:

- (1) the Penman-Monteith formula, the energetic term of which was specifically calibrated, was chosen from among the 11 formulae tested as it was best in simulating the ET_o measured in 2 agrometeorological areas representative of the climate in the coastal plains of southern Italy;
- (2) ET_o was calculated according to Penman-Monteith for the 54 stations which had complete data;
- (3) a regression formula was found which made it possible to estimate with a reasonable degree of accuracy the ET_o of the 54 stations using only the geographical data and temperature available for the other 213 stations;

- (4) the regression formula mentioned above at point 3 was used to calculate ETo for all of the 267 stations with a probability of non-exceedance of 75% and for a wind velocity of 150 km/d;
- (5) the data obtained under point 4 were used to draw the maps of annual ETo, of ETo in the months in which ETo > rainfall and peak month ETo;
- (6) a table has been drawn up for the calculation of ETo for a wind velocity other than 150 km/d.

Various procedures have been worked out to correct original meteo data conditioned by particular criteria of observation and the location of the stations.

The range of ETo values on the different stations was 2.7 -3.5 mm/d annual average and 5.5-7.0 peak month. A peak month ETo value of 7.9 mm/d was calculated for an inland locality in southern Sardinia.

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