PST18.A - Different filling season results in different zooplankton assemblages in Mediterranean temporary ponds

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In Mediterranean temporary ponds, the start of the aquatic phase depends on the amount of rain that accumulates after the summer. They may be filled some years in autumn, others in winter and others in spring. Interannual differences in the filling phase determine different initial environmental conditions that aquatic organisms have to face to complete their life cycles. We collected sediments from a temporary pond and performed an experiment simulating three different months of pond filling: November (autumn), January (winter) and March (spring). One month after inundation, we filtered zooplankton.

Different zooplankton assemblages were characteristic of each filling treatment. The highest diversity was found in the winter filling treatment, when the assemblages were characterized by three species (Hemidiaptomus roubaoui, Euchlanis dilatata and Keratella quadrata). With the late filling, in spring, we observed the lowest mean species richness and diversity but also the highest abundance of individuals. Then, the cladoceran Chydorus sphaericus was largely predominant, as a probable bioindicator of unfavourable conditions for the emergency of most other zooplankton species. The characteristic variability of the filling season and pond hydroperiod in Mediterranean habitats favours different predominant species in different years, resulting in an overall increase in species richness and diversity in the long term.