



ABSTRACTS

SIL-Austria Meeting, October 14 – 16, 2015

at the NEW Biological Station at Lake Neusiedl, A-7142 Illmitz

<http://www.burgenland.at/natur-umwelt-agrar/natur/biologische-station-neusiedler-see/>

**"Limnological research in and around the
European Alps –
a common effort for a common future"**

www.sil-austria.at

<https://www.facebook.com/groups/silaustralia/>

CAPELLI Camilla, Andreas Ballot, Leonardo Cerasino, Nico Salmaso

Fondazione E.Mach

Potential toxicity and distribution patterns of *Dolichospermum lemmermannii* (Cyanobacteria) in European lakes

Dolichospermum lemmermannii (Nostocales) is distributed in temperate and boreal regions. Despite this species is typical of cold environments, many populations were shown to be able to form huge water blooms in summer stratified conditions. Indeed, this species is characterized by high variability to temperature adaptation and some strains show high temperature optima (i.e. between 19°C and 26°C). In the large and deep lakes south of the Alps *D.lemmermannii* developed only recently. Extended surface bloom occurred firstly in Lake Garda (1990/91) and progressively in lakes Iseo (second half of the 1990s), Maggiore (2005), and Como (2006). The recent spread of this species in Southern Europe emphasizes its ecological heterogeneity. Since all these evidences suggest the existence of different ecotypes adapted to different European climatic regions, a wide research on populations isolated from several European waterbodies was carried out. Several strains of *D.lemmermannii* were studied applying a multidisciplinary approach, which includes taxonomical, genetic and metabolomic analyses. A phylogenetic study on the 16S rRNA and housekeeping genes (e.g. *rpoB*,) was integrated by the assessment of the toxic potential, evaluating the presence of cyanotoxins (i.e. microcystins, nodularins, anatoxins, cylindrospermopsins) and cyanotoxins encoding genes. Further studies will allow gaining insight about the phylogeography of this fast spreading species at a continental level, along climatic and trophic gradients.