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The status knowledge of Chilean *Artemia* populations: Future trends for studies and management

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The brine shrimp *Artemia* in Chile is represented by two species, *A. franciscana* Kellog, 1906 that inhabits in saline mountain and coastal lakes in northern Chile, and salt works in central Chile (18-36º S), and the second species is *A. persmilis* that inhabits in two saline lakes in southern Chile (51-53º S) (Gajardo et al., 1998; De los Ríos & Zúñiga, 2000; De los Ríos, 2005). On a genetical view point, the Chilean strains have a marked genetical isolation that is expressed in variability on cytogenetical properties (Colihueque & Gajardo, 1996; Gajardo et al., 2001), and in protein expressions (Gajardo et al., 1995), this information is expressed in marked morphometrical properties such as body parameters (Gajardo et al., 1998) and reproductive morphometry (De los Ríos & Zú ñiga, 2000).

On an ecological view point, the populations of *A. franciscana* inhabits in mountain saline lakes with sulphated brines, coastal ponds and salt works with chlorine brines (Zúñiga et al., 1991, 1994, 1999; Gajardo et al., 1998). Whereas the *A. persimilis* populations inhabits in saline lakes with chlorine brine (Campos et al., 1996). The *A. franciscana* habitats have only brine shrimps as exclusive component of zooplankton, and in spite of the existence of halophilic copepod *B. poopoensis*, both species do not coexist (De los Ríos, 2005; De los Ríos & Gajardo, In press-1). A different situation occurs in *A. persimilis* habitats where it is possible found coexistence with other halophilic copepods such as harpacticoids and *B. poopoensis* (De los Ríos & Gajardo, In press-2). The brine shrimps would graze on halophilic bacteria and phytoplankton in their natural habitats (Zúñiga et al., 1991, 1994), and there are not antecedents about the presence of predators on brine shrimps, nevertheless, it would be possible that aquatic birds such as Chilean flamingoes can be a potential predator on brine shrimps (López, 1990). The life histories of Chilean brine shrimps are different in function of their natural habitat, then the populations of saline mountain lakes and salt works have ovoviviparous reproduction (Zúñiga et al., 1994, 1999), whereas the populations of coastal ponds have oviparous reproduction (Zúñiga et al.,

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1994, 1999). The population dynamics consist is different because in ovoviviparous populations when the environmental factors are not optimal it occur a high adult mortality, and the survival individuals generate the new population (Zúñiga et al., 1994), whereas in oviparous populations when the environmental conditions are not optimal, the individual generates cysts (Zú ñiga et al., 1999).

The importance of the Chilean brine shrimps populations is as genetic resource due their variability (De los Ríos & Gajardo, 2004). On this scenario, it is necessary studies on conservation biology view point, because with the increase of species introduction due aquaculture activities, it is possible in an scenario of introduction of foreign populations, it occurs replacement of native strains (De los Ríos & Gajardo, 2004), by colonization of habitats such as salt works (Gajardo et al., 2004). Other risk of native brine shrimps populations are the habitats fragmentation and/or decreasing that can be due climate alterations such as reported for Magallanes region (De los Ríos et al., 2008), or mining activities in saline lakes of northern Chile (Keller & Soto, 1998). The potential use of aquaculture of Chilean strains would imply the use of populations of coastal ponds, considering that these populations can reproduce by cysts, and these have relatively optimal reproduction and growth in conditions of marine aquaculture in comparison to populations of sulphated saline mountain lakes (Zúñiga & Wilson, 1996).

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