

## E-III10

### Report of Preliminary Results on Inoculation of *Artemia franciscana* in nondeepened ponds of Saltern Ston (Central Adriatic)

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Parthenogenetic brine shrimp *Artemia* is presented in Yugoslavia in saltworks in Strunjan, Sečovlje and Ulcinj (MAJIĆ and VUKADIN, 1987). Considering cyst diameters of hydrated untreated cysts, Yugoslavian *Artemia* from Sečovlje are bigger when compared with more than 70 *Artemia* sources of the world (Sveučilište u Splitu, 1985, LEGER and all., 1986, PETROVIĆ, 1987). The lack of the cysts, suitable for the Yugoslav mariculture results in a total dependence on the imported cysts. For that reason, in August 1987 inoculation with *Artemia franciscana* was carried out in the nonmodified ponds the saltwork at Ston (42°50'N; 17°41'E). The inoculation was realized in an evaporation pond (1020 sq.m., depth 15 cm) and the Rotonda canal (200 sq.m., average depth 30 cm). The aim of present experiment was to collect preliminary data on environmental conditions and to verify if introduction of *Artemia* could result in the establishment of a temporal *Artemia* population in the nonmodified evaporation ponds of saltern, where had never been recorded *Artemia* before.

Before stocking the nauplii, the ponds were drained to eradicate predatory fishes *Cyprinodon calaritanus* S.V. After drying the evaporation pond and Rotonda were felt with brine of 84 ppt and 75.4 ppt. After fertilization according to WALNE (1966) the inoculation was carried out with nauplii of *Artemia franciscana*, a bisexual strain from San Francisco Bay (batch n° 503-16). The *Artemia* cysts were decapsulated according to SORGELOOS and all. (1977). The 48 hours old nauplii of an approximate size of 350-710 µm were put in the ponds at the concentrations of cca 50 ind/l.

In the evaporation pond the individuals started riding ten days after inoculation. The cysts were produced 54 days later at a salinity of 232 ppt and at the dissolved oxygen concentration of 1.42-2.03 ml/l of O<sub>2</sub>. There were 4.36 gr cysts collected two times in October. As it rained hard two times during the end of experiment, nauplii were produced from the cysts. Maximum density of individuals in evaporation was noted 54 th day from inoculation, in cca 540 ind/l and all developing forms of *Artemia* with domination of nauplii were presented.

In the Rotonda canal *Artemia* started riding on the eight day following inoculation. They reproduced in ovoviparous way up to day 24 after which they produced 2.68 gr of cysts and they all died. The salinity was 87.32 ppt and the dissolved oxygen concentration in the morning was 6.56 ml/l of O<sub>2</sub>. The concentration of dissolved oxygen during the night were not measured.

At the moment of mass mortality of *Artemia* in Rotonda canal, the red-tide of dinoflagellate *Peridinium subsalsum* Ostefeld (40x37,5 µm) were observed in the concentration of 310 cells µm<sup>-1</sup>. The seawater was mucous, of an intensive yellow-brown colour. Alimentary canal of *Artemia* were full with the cysts of dinoflagellates, even on their thoracopods.

Preliminary test inoculation carried out with *Artemia franciscana* in nondeepened ponds showed that in the conditions of our climate, *Artemia* can survive. Temperature varied during the day between 17.0 and 34.2°C, and salinity ranged during experiment between 75.4 to 232.0 ppt. In evaporation pond, at a higher salinity, higher temperature and lower water intake, the individuals achieved a smaller length and in Rotonda where the salinity and temperature were lower and the higher water intake, the individuals were longer.

The maximum size of *Artemia* in the evaporation pond was 8781 µm for males and 8906 µm for females. In Rotonda, the maximum size of a male was approximately 12430 µm, and that of a female 13063 µm.

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