Yellow spotted belly in Fire salamander, *Salamandra salamandra* (Linnaeus, 1758)

Žute pjege na trbuhu kod pjegavog daždevnjaka, *Salamandra salamandra* (Linnaeus, 1758)

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The Fire salamander is widely distributed resident species (Janev-Hutinec et al. 2006). It is most commonly found in cool and humid deciduous forests, rarely in coniferous woods, often close to streams, but also in more open landscapes like meadows or even in towns (Arnold, 2004; Kwet, 2009). The species shows considerable variation in color and skin pattern. Size, shape and number of bright markings vary considerably even within populations. Salamanders from the Balkans and eastern Europe to the Alps usually have a pattern of irregular orange or yellow spots. These spots are usually irregularly distributed over the dorsal and lateral sides, but rarely on the ventral side (Hutchins & Duellman 2003). Arnold (2004) and Kwet (2009) refer that belly can be entirely black to grey or weakly spotted yellow but they do not indicate for which subspecies or geographic area this refers to. Thiesmeier & Grossenbacher (2003) indicate that *S. s. salamandra* has north to southeast decreasing yellow body mottling at sides and bottom side. No percentage of occurrences of this variation is given in any of the literature.

Specimens of Fire salamander with yellow spotted belly were found individually in Croatia: Medvednica (13 April 2008; 45.906575°N, 15.990340°E; Fig. 1a; and 7 November 2009; 45.890963°N, 15.947855°E; Fig. 1b), Vugrovec (3 March 2009; 45.894280°N, 16.096632°E) and Turopolje (5 April 2011; 45.625319°N, 16.188687°E; Fig. 1.c). All localities are near Zagreb. Individual found in Turopolje had a whole variety of dot color from white-yellow to reddish (Fig. 1.c). During a long term research preformed in Bosnia and Herzegovina by one of the authors (G.S.), frequency of mutation occurrence in two populations near Banja Luka, was recorded. In village Prijakovci (2011-2012; 44.718234°N, 17.229919°E) population 28 out of 100 (28%) individuals had spots on belly and in Banj Brdo (2011-2012; 44.761040°N, 17.284116°E) population 27 out of 70 (39%). Only white and yellow spots were recorded.

REFRENCES

Janev Hutinec, B., Kletečki, E., Lazar, B., Podnar Lešić, M., Skejić, J., Tadić, Z. & Tvrtković, N. (2006): Red book of Amphibians and Reptiles of Croatia. Ministry of Culture, State Institute for Nature Protection, Republic of Croatia, Zagreb, 95 pp.

Thiesmeier, B. & Grossenbacher, K. (2003): Salamandra salamandra (Linnaeus, 1758) – Fauersalamander, pp. 1059-1132. In: Thiesmeier, B. & Grossenbacher, K. (Eds.): Handbuch der Reptilien und Amphibien

Europas. Band 4/IIB; Schwanzlurche (Urodela) IIB. AULA-Verlag,

Kwet, A. (2009): New Holland European Reptile and Amphibian Guide. New Holland Publishers, UK, pp. 20-23.

Arnold, N. (2004): A field guide to the reptiles and amphibians of Britain and Europe. Harper Collins Publishers, London, pp. 30-32.

Hutchins, M. & Duellman, W. E. (2003): Grzimek's Animal Life Encyclopedia: Amphibians. Edition 2, Volume 6, Gale, pp. 507.

Figure 1. Specimens of yellow spotted bellied Fire salamander (*Salamandra salamandra*) from Medvednica (a & b) and Turopolje (Croatia) (c), and specimen with normally black colored belly for comparison (d)

Slika 1. Nalazi jedinki pjegavog daždevnjaka (*Salamandra salamandra*) sa žuto obojenim pjegama na trbuhu s Medvednice (a i b) i Turopolja (Croatia) (c) te jedinka s crno obojenim trbuhom za usporedbu (d)