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Development of a new ecotoxicological assay using the testate amoeba *Euglypha rotunda* (Rhizaria; Euglyphida) and assessment of the impact of the herbicide S-metolachlor

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## **ACCEPTED MANUSCRIPT**

Development of a new ecotoxicological assay using the testate amoeba 1 Euglypha rotunda (Rhizaria; Euglyphida) and assessment of the impact of 2 the herbicide S-metolachlor 3 4 Nathalie Amacker<sup>a,d</sup>, Edward A.D. Mitchell<sup>a,b</sup>, Benoît J. D. Ferrari<sup>c</sup>, Nathalie Chèvre<sup>d</sup> 5 6 7 <sup>a</sup> Laboratory of Soil Biodiversity, University of Neuchâtel, Rue Emile Argand 11, CH-2000 Neuchâtel, Switzerland 8 <sup>b</sup> Jardin Botanique de Neuchâtel, Chemin du Perthuis-du-Sault 58, CH- 2000 Neuchâtel, 9 Switzerland 10 11 <sup>c</sup> Swiss Centre for Applied Ecotoxicology Eawag-EPFL (Ecotox Centre), EPFL-ENAC-IIE-GE, Station 2, CH-1015 Lausanne, Switzerland 12 d Institut des dynamiques de la surface terrestre (IDYST), University of Lausanne, CH-1015 13 Lausanne, Switzerland 14 15 Corresponding author: Nathalie Chèvre 16 Address: Quartier UNIL-Mouline, Bâtiment Géopolis, 3630, CH-1015 Lausanne, Switzerland. 17 E-mail: nathalie.chevre@unil.ch 18 Phone number: +41 21 692 35 57 19 20 Keywords: soil, microorganisms, protist, protozoa, Escherichia coli, pesticide 21 22 1. Introduction 23 Various chemical compounds have become part of our modern societies and are 24 spread intentionally (e.g. in agriculture) or not (e.g. drugs, cosmetics, etc.) in the 25 environment (Schwarzenbach et al., 2006). Among these, pesticides are widely applied on 26 27 crops with aim to protect them from pests and pathogens or to suppress competitive weeds. Pesticides are also used in public health program to control vectors of human diseases 28

especially in the tropics (World Health Organization, 1990; Chen et al., 2010). However, the

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