

Supporting information

Environmental Behavior of the Chiral Aryloxyphenoxypropionate herbicide Diclofop-methyl and Diclofop: Enantiomerization and Enantioselective Degradation in Soil.

Jinling Diao, Peng Xu, Peng Wang, YueLe Lu, Dahai Lu, and Zhiqiang Zhou^{*}

Department of Applied Chemistry, China Agricultural University, Beijing 100193,
China

^{*}Correspondence author. Address: Department of Applied Chemistry, China Agricultural University, Beijing 100193, China. E-mail: zqzhou@cau.edu.cn Fax: 861062733547.

Summary

There are six pages in the supporting information section, including six figures.

^{*} Correspondence to: Professor Zhiqiang Zhou, Department of Applied Chemistry, China Agricultural University, Beijing 100193, China.

E-mail: zqzhou@cau.edu.cn

Fax: 861062733547

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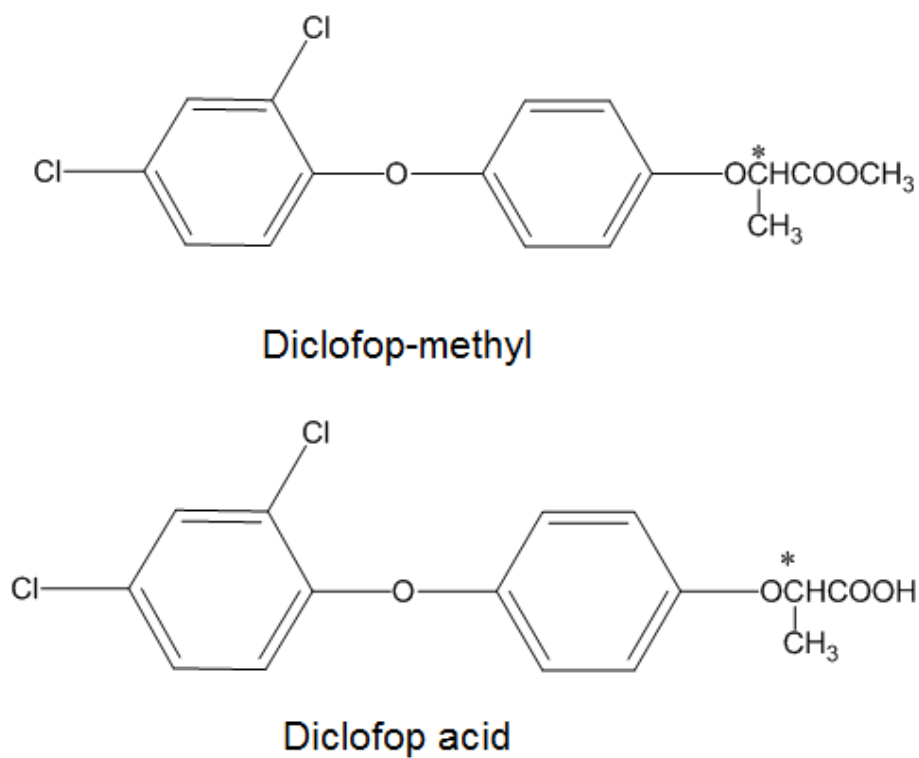


Figure S1. Chemical structures of diclofop-methyl and diclofop .

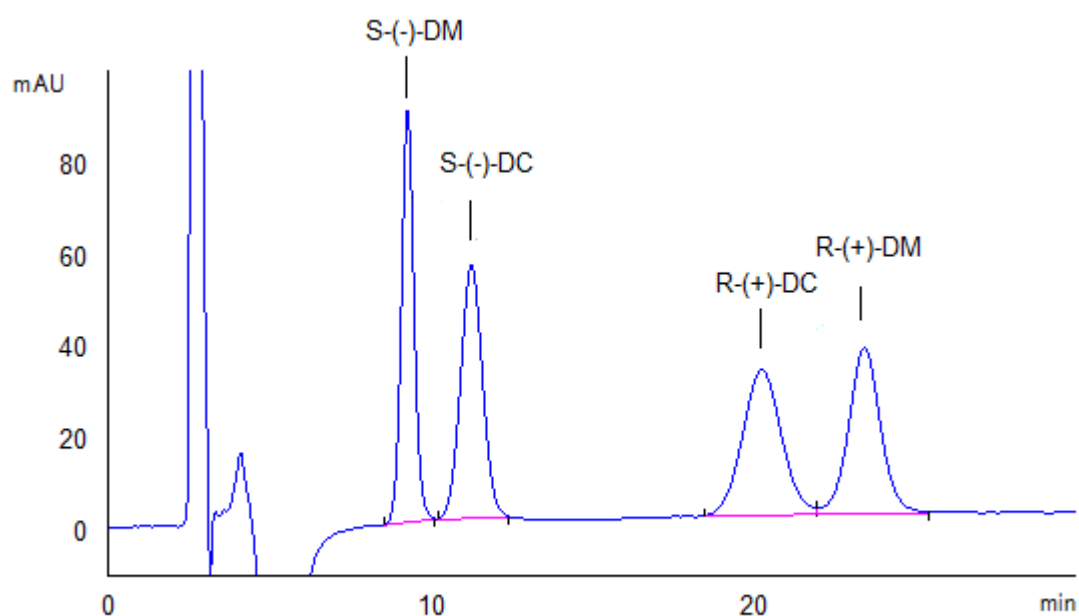


Figure S2. A representative HPLC chromatogram of UV of DM and DC at 230nm.
[n-hexane:2-propanol:TFA = 96:4:0.1, flow rate 1.0ml/min].

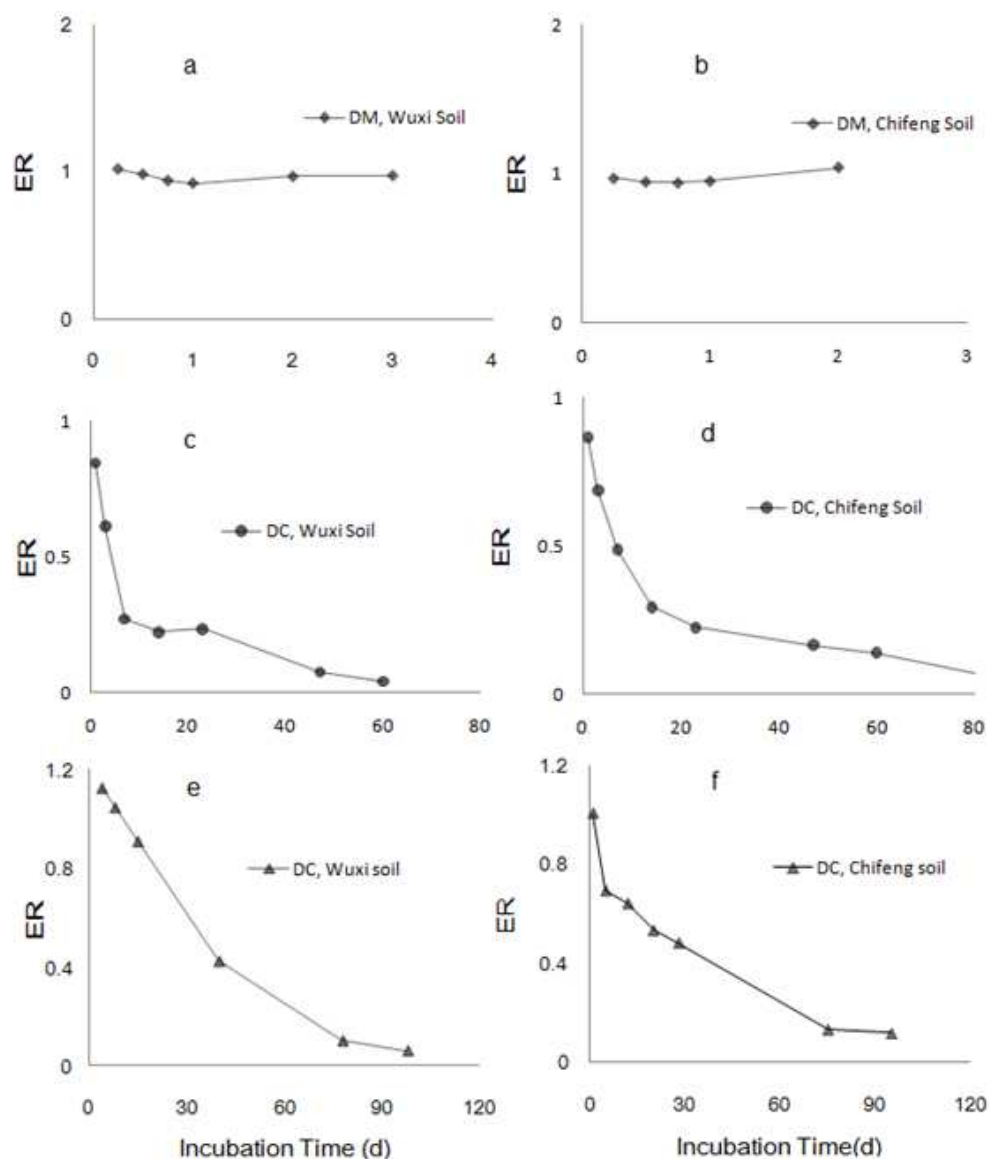


Figure S3. Enantiomeric Ratio (ER) of (a) DM residues in the aerobic Wuxi soil (exp. SW1), (b) DM residues in the aerobic Chifeng soil (exp. SC1), (c) DC residues in the aerobic Wuxi soil (exp. SW4), (d) DC residues in the aerobic Chifeng soil (exp. SC4), (e) DC residues in the anaerobic Wuxi soil (exp. SW7), and (f) DC residues in the anaerobic Chifeng soil (exp. SC7).

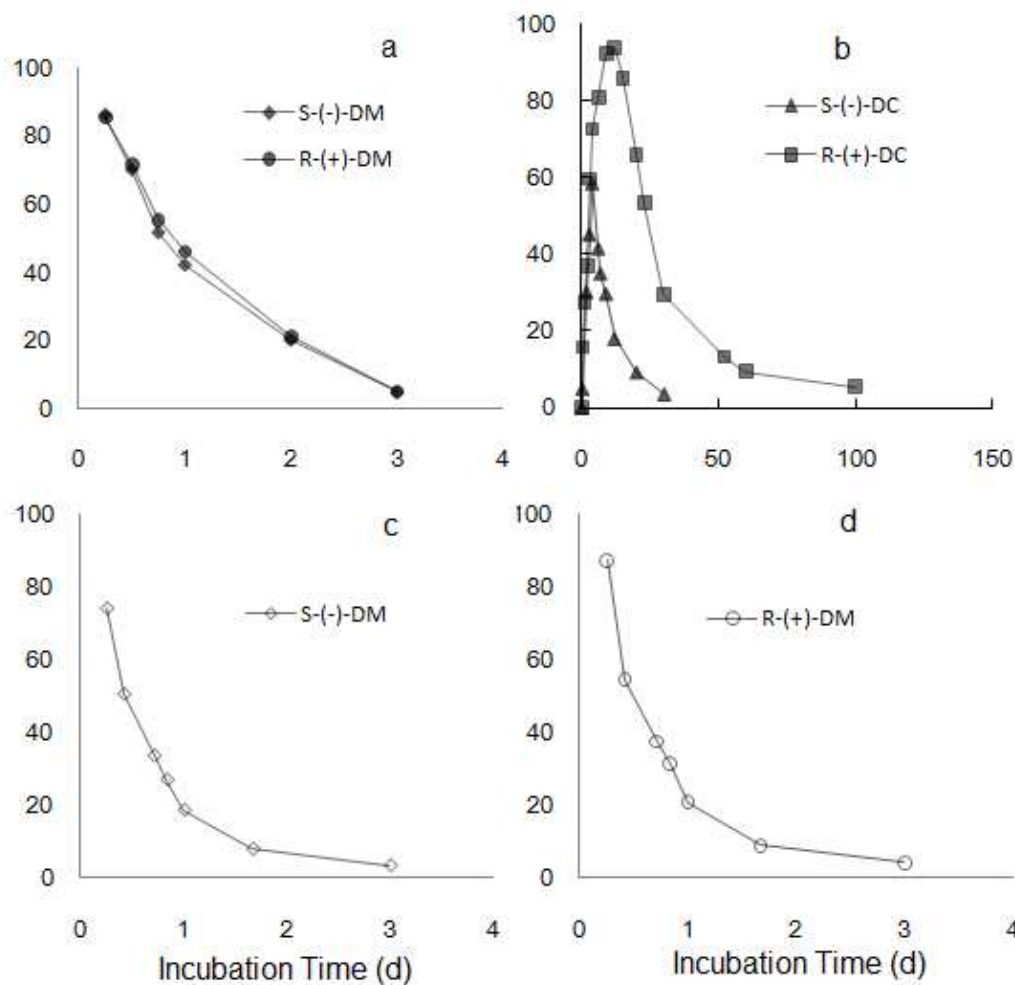


Figure S4. Degradation of DM in Wuxi soil experiments SW1, SW2 and SW3 with *rac*-, S-(-)-, R-(+)-DM, respectively. (a) Degradation of *rac*-DM showing unenantioselective degradation of the two enantiomers (exp.SW1), (b) the concurrent formation and degradation of DC arising from DM (exp.SW1), (c) degradation of the S-(-)-DM (exp.SW2), and (d) degradation of the R-(+)-DM (exp. SW3). Normalized concentrations ($100C/C_0$) are plotted versus incubation time (d).

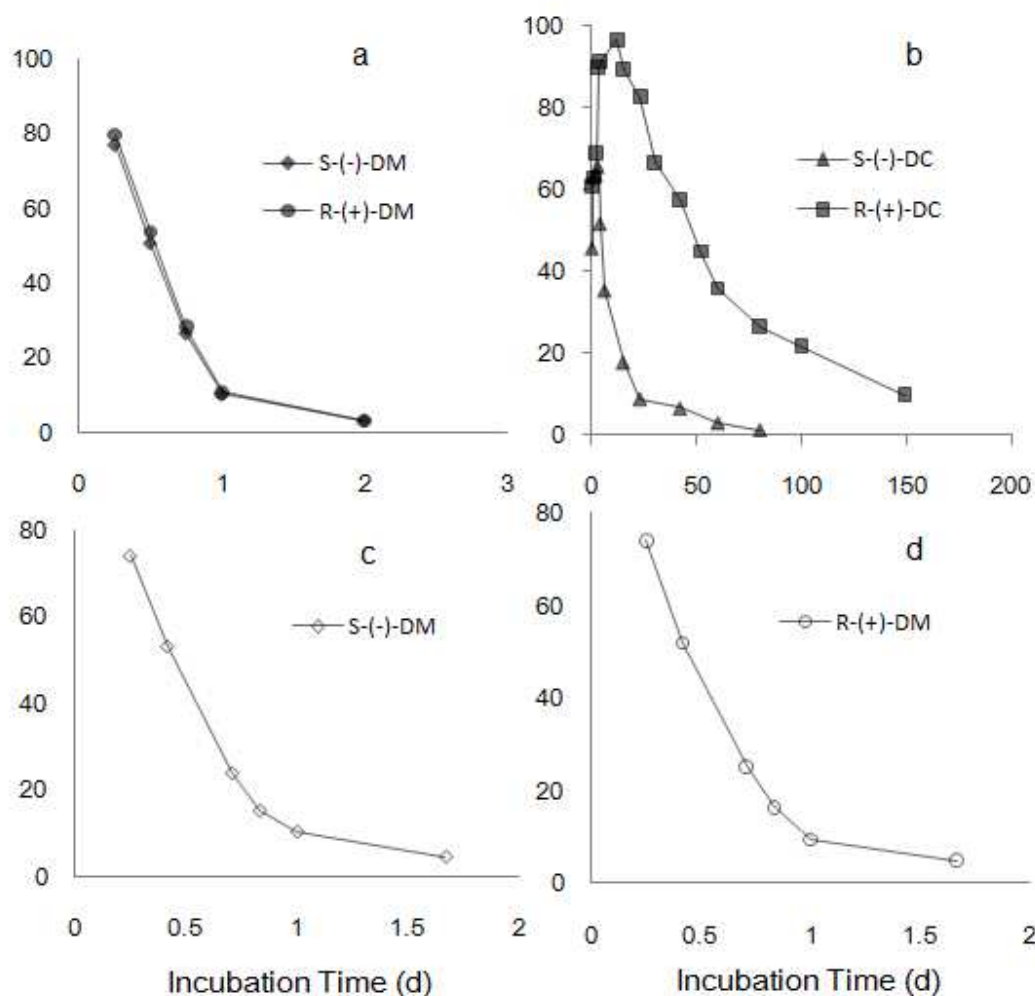


Figure S5. Degradation of DM in Chifeng soil experiments SC1, SC2 and SC3 with *rac*-, S-(-)-, R-(+)-DM, respectively. (a) Degradation of *rac*-DM showing unenantioselective degradation of the two enantiomers (exp.SC1), (b) the concurrent formation and degradation of DC arising from DM (exp.SC1), (c) degradation of the S-(-)-DM (exp.SC2), and (d) degradation of the R-(+)-DM (exp. SC3). Normalized concentrations (100C/C₀) are plotted versus incubation time (d).

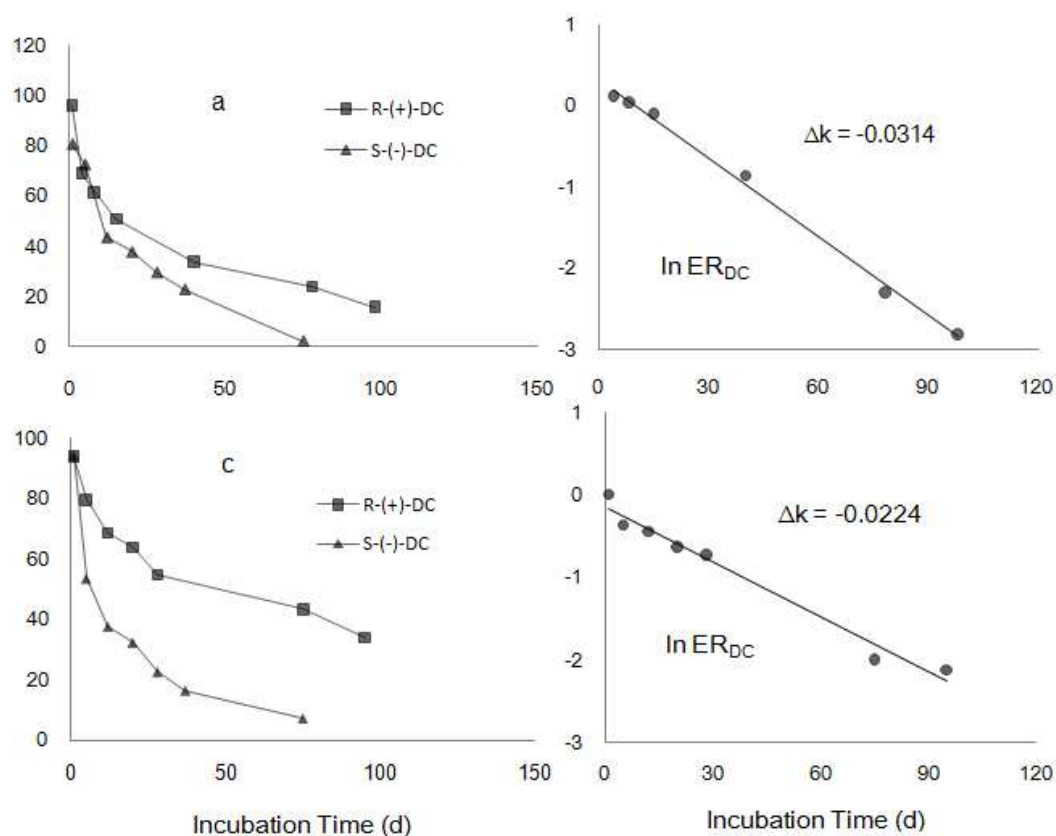


Figure S6. Degradation of DC with *rac*-DC in (a) Wuxi soil (exp. SW7), and (c) Chifeng soil (exp. SC7). Normalized concentrations ($100C/C_0$) are plotted versus incubation time (d). Note the faster degradation of the S-(-)-enantiomer. Plot of $\ln(ER)$ from (b) exp.SW7 (Wuxi soil, incubation of *rac*-DC), and (d) exp. SC7 (Chifeng soil, incubation of *rac*-DC) versus incubation time showing a linear relationship .