**UV-Vis spectra and mass/mass spectra of clethodim transformation products (C1-C9).**

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**UV-Vis spectra and mass/mass spectra of sethoxydim transformation products (S1-S9).**

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**Isomeric structures of clethodim and its degradation products (C1-C9).**

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| ***E*-clethodim** | | | |
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| *Z*-clethodim (C1) | | | |
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| Dechloroallyoxylated clethodim (C2) | | | |
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| (RR,SS)+(RS,SR) *Z*-clethodim sulfoxides (C3&C4) | | | |
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| (RR,SS)+(RS,SR) *E*-clethodim sulfoxides (C5&C6) | | | |
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| (RR,SS)+(RS,SR) dechloroallyoxylated clethodim sulfoxides (C7&C8) | | | |
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| Dechloroallyoxylated clethodim ketone (C9) | | | |

**Isomeric structures of sethoxydim and its degradation products (S1-S9).**

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| ***E*-sethoxydim** | | | |
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| *Z*-sethoxydim (S1) | | | |
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| Deethoxylated sethoxydim (S2) | | | |
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|  |  |  |  |
| (RR,SS)+(RS,SR) *Z*- sethoxydim sulfoxides (S3&S4) | | | |
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| (RR,SS)+(RS,SR) *E*- sethoxydim sulfoxides (S5&S6) | | | |
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| (RR,SS)+(RS,SR) deethoxylated sethoxydim sulfoxides (S7&S8) | | | |
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| Deethoxylated sethoxydim ketone (S9) | | | |

**Kinetic profiles of the photoproducts formed during the irradiation of clethodim (C1-C9) in leaf and soil model systems.**

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| **Leaf surface model systems** |  | **Soil surface model systems** |
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| MeOH |  | Glass disk |
|  |  |  |
|  |  |  |
| 2-Propanol |  | Silica gel plates |
|  |  |  |
|  |  |  |
| Cyclohexane |  |  |
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**Kinetic profiles of the photoproducts formed during the irradiation of sethoxydim (S1-S9) in leaf and soil model systems.**

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| **Leaf surface model systems** |  | **Soil surface model systems** |
|  |  |  |
| MeOH |  | Glass disk |
|  |  |  |
|  |  |  |
| 2-Propanol |  | Silica gel plates |
|  |  |  |
|  |  |  |
| Cyclohexane |  |  |
|  |  |  |