Supplementary Material

**The effects of single and multiple weed interference on soybean yield**

Jong-Seok Song, Jin-Won Kim, Ji-Hoon Im, Kyu-Jong Lee, Byun-Woo Lee, and Do-Soon Kim\*

Table S1. Pairwise comparisons of estimated parameters from equations 1 and 5 between years.

|  |  |  |  |
| --- | --- | --- | --- |
| Weed species | Year comparison | Parameter estimatesa | |
| Y0 | β |
| *Ambrosia artemisiifolia* | 2013 vs. 2014 | ns | ns |
| *Sonchus oleraceus* | 2013 vs. 2014 | ns | ns |
| *Chenopodium album* | 2013 vs. 2014 | ns | ns |
| *Echinochloa crus-galli* | 2013 vs. 2014 | ns | ns |
| *Beckmannia syzigachne* | 2013 vs. 2014 | ns | ns |
| Multiple weeds | 2013 vs. 2014 | ns | ns |

aY0 and β represent weed-free soybean yield and weed competitiveness



**Figure S1.** Dry weight as a function of weed density of *Ambrosia artemisiifolia* (A), *Sonchus oleraceus* (B), *Chenopodium album* (C), *Echinochloa crus-galli* (D), and *Beckmannia syzigachne* (E)in 2013 (···) and 2014 (—). The lines are fitted values calculated using the rectangular hyperbolic model.



**Figure S2.** Number of pods as a function of weed density of *Ambrosia artemisiifolia* (A), *Sonchus oleraceus* (B), *Chenopodium album* (C), *Echinochloa crus-galli* (D), and *Beckmannia syzigachne* (E)in 2013 (···) and 2014 (—). The lines are fitted values calculated using the rectangular hyperbolic model.



**Figure S3.** Number of seeds as a function of weed density of *Ambrosia artemisiifolia* (A), *Sonchus oleraceus* (B), *Chenopodium album* (C), *Echinochloa crus-galli* (D), and *Beckmannia syzigachne* (E)in 2013 (···) and 2014 (—). The lines are fitted values calculated using the rectangular hyperbolic model.



**Figure S4.** 100 seed weight as a function of weed density of *Ambrosia artemisiifolia* (A), *Sonchus oleraceus* (B), *Chenopodium album* (C), *Echinochloa crus-galli* (D), and *Beckmannia syzigachne* (E)in 2013 (···) and 2014 (—). The lines are fitted values calculated using the rectangular hyperbolic model.