## **Supporting Information**

## Wright et al. 10.1073/pnas.1013154107

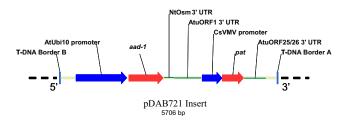


Fig. S1. Schematic insert from aryloxyalkanoate dioxygenases (AAD)-1 construct (plasmid pDAB721). Description of construct elements: AtUbi10 promoter, ubiquitin promoter from *Arabidopsis thaliana*; NtOsm3' UTR, 3' UTR from *Nicotiana tabacum* Osmotin; AtuORF1 3' UTR, 3' UTR from *Agrobacterium tume-faciens*; CsVMV promoter, promoter from cassava vein mosaic virus; AtuORF25/26 3' UTR, 3' UTR from *A. tumefaciens*.

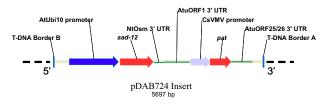


Fig. 52. Schematic insert from aad-12 construct (plasmid pDAB724). Description of construct elements: AtUbi10 promoter, ubiquitin promoter from A. thaliana; NtOsm3' UTR, 3' UTR from N. tabacum Osmotin; AtuORF1 3' UTR, 3' UTR from A. tumefaciens; CsVMV promoter, promoter from cassava vein mosaic virus; AtuORF25/26 3' UTR, 3' UTR from A. tumefaciens.

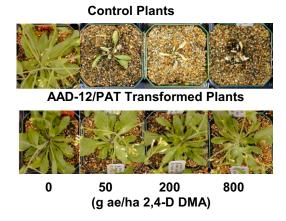
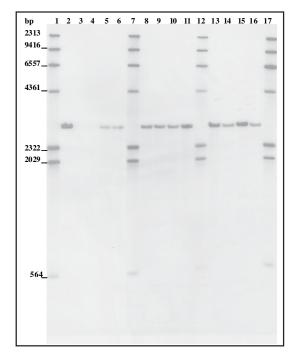


Fig. S3. Aad-12 transformed Arabidopsis response to 2,4-D in greenhouse.



pDAB4468 Insert 6794 bp

Fig. 54. Schematic insert from aad-12 construct (plasmid pDAB4468). Description of construct elements: AtUbi10 promoter, ubiquitin promoter from A. thaliana; NtOsm3' UTR, 3' UTR from N. tabacum Osmotin; AtuORF1 3' UTR, 3' UTR from A. tumefaciens; CsVMV promoter, promoter from cassava vein mosaic virus; AtuORF25/26 3' UTR, 3' UTR from A. tumefaciens.



**Fig. S5.** Southern blot analysis of soybean event C. DNA isolated from unmodified soybean and three generations of transgenic soybean event C was digested with *Pst* I to release the *aad*-12 expression cassette followed by probing with the *aad*-12 gene probe (expected size = 2,869 bp). Approximately 9  $\mu$ g genomic DNA was digested and loaded per lane. The positive control included plasmid pDAB4468 in 9  $\mu$ g nontransgenic Maverick genomic DNA at a ratio approximately equivalent to one *aad*-12 copy per soybean genome. Lanes 1, 7, 12, and 17 show DNA size marker. Lane 2 shows plasmid pDAB4468 positive control. Lanes 3 and 4 show nontransgenic control soybean Maverick. Lanes 5 and 6 show two plants from T<sub>2</sub> generation. Lanes 8–11 show four plants from T<sub>3</sub> generation. Lanes 13–16 show four plants from T<sub>4</sub> generation

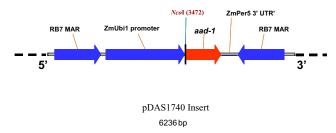
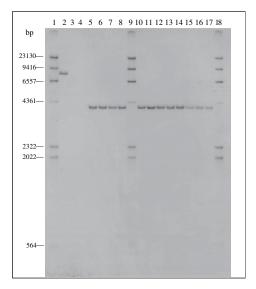


Fig. S6. Schematic map of plasmid pDAS1740 insert (aad-1). Description of construct elements: RB7 MAR, matrix attachment region (MAR) from *N. tabacum*; ZmUbi1 promoter, ubiquitin promoter from Zea mays; ZmPer5 3' UTR, 3' UTR from Z. mays peroxidase gene.



**Fig. 57.** Southern blot analysis of maize event A: Ncol digestion with *aad*-1 probe. Genomic DNA isolated from individual plants in three generations of event A was digested with Ncol and probed with the *aad*-1 gene probe. Nine micrograms DNA were digested and loaded per lane. The positive control contained plasmid pDAS1740 in 9  $\mu$ g genomic DNA from nontransgenic control at a ratio approximately equivalent to one *aad*-1 copy per maize genome. Lanes 1, 9, and 18 show DNA size marker. Lane 2 shows plasmid positive control. Lanes 3 and 4 show nontransgenic control. Lanes 5–8 show four plants from T<sub>3</sub> generation. Lanes 10–13 show four plants from T<sub>4</sub> generation. Lanes 14–17 show four plants from BC<sub>3</sub>S<sub>1</sub> generation.

Table S1.	Expression	of AAD-12	protein	in	leaves	of	transgenic
soybean li	nes						

	AAD-12 (ng/mg leaf dry weight)				
Generations	$T_4 (n = 40)$	T <sub>5</sub> ( <i>n</i> = 180)			
Control	ND	ND			
Soybean event C	65.1 (± 15.7)	38.7 (± 9.9)			
Soybean event D	40.5 (± 11.8)	32.1 (± 14.2)			

Soybean plants were planted in greenhouse at Dow AgroSciences LLC or field conditions. Four leaf punches of each plant were collected at the V<sub>3-4</sub> stage. The AAD-12 level was quantified by a quantitative ELISA. Control, nontransgenic plants; events A and B, transgenic maize lines at generations T<sub>4</sub> and T<sub>5</sub> (deviated range represents  $\pm 1$  SD).

Table S2.	Expression	of AAD-1	protein	in	leaves	of	transgenic
maize lines	5						

	AAD-1 (ng/mg leaf dry weight)				
Generations	T <sub>3</sub> ( <i>n</i> = 10)	$BC_1 (n = 40)$	BC <sub>2</sub> (n = 40)		
Control	ND	ND	ND		
Maize event A	53.3 (± 22.7)	20.9 (± 1.9)	21.7 (± 8.4)		
Maize event B	41.2 (± 15.3)	27.3 (± 6.8)	19.1 (± 5.5)		

Maize plants were planted in greenhouse at Dow AgroSciences LLC. Four leaf punches of each plant were collected at the V<sub>5-6</sub> stage. The AAD-1 level was quantified by a quantitative ELISA. Control, nontransgenic plants; events A and B, transgenic maize lines at generation T<sub>3</sub>, BC<sub>1</sub>, and BC<sub>2</sub> (deviated range represents  $\pm 1$  SD).