

Table 1. Yield, Cost and Economic Performance																	
Annotated bibliography of results comparing yield, costs and economic performance of adopters and non-adopters of GE crops.																	
	Peer-reviewed (P) or government report	Technology	Crop	Developed (1) or Developing (2)	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	% change [(genetically engineered-conventional)/ conventional] unless otherwise noted	% change costs [(genetically engineered-conventional)/ conventional]			direction of change (genetically engineered-conventional)	statistical analysis presented?	additional notes
											yield	seed including tech fee	pesticides	seed and pesticides	economic performance (+, 0, -)		
Serecon Management Consulting et al. 2001	N	HT	canola	1	Canada	Western Canada		2000	637 farmers	means	10.0%	139%	-61%		+		N
Gouse et al. 2009	P	HT	corn	2	South Africa	KwaZulu Natal		2006/07	249 farmers	means	85.0%	76%	79%		+		N
Fernandez-Cornejo et al. 2002	G	HT	corn	1	US	Eastern Heartland		1998	USDA ARMS	econometric model					+		Y
Fernandez-Cornejo et al. 2002	G	HT	corn	1	US	Northern Crescent		1998	USDA ARMS	econometric model					+		Y
Fernandez-Cornejo et al. 2002	G	HT	corn	1	US	Prairie Gateway		1998	USDA ARMS	econometric model					0		Y
Fernandez-Cornejo et al. 2002	G	HT	corn	1	US	Western Heartland		1998	USDA ARMS	econometric model					+		Y
Fernandez-Cornejo et al. 2002	G	HT	corn	1	US			1998	USDA ARMS	econometric model					+		Y
Marra et al. 2005	N	HT	corn	1	US	North Carolina		2001	293 farmers	within-farm comparison	NS	NS					Y
Klotz-Ingram et al. 1999	P	HT	cotton	1	US	Mississippi Portal		1997	USDA ARMS	means	NS						Y
Fernandez-Cornejo et al. 2002	G	HT	cotton	1	US	Nationwide		1997	USDA ARMS	econometric model	17.0%						Y
Fernandez-Cornejo et al. 2002	G	HT	cotton	1	US	Nationwide		1997	USDA ARMS	econometric model					+		Y
Klotz-Ingram et al. 1999	P	HT	cotton	1	US	Southern Seaboard		1997	USDA ARMS	means	-11.9%						Y
Klotz-Ingram et al. 1999	P	HT	cotton	1	US			1997	USDA ARMS	econometric model	positive				+		Y
Klotz-Ingram et al. 1999	P	HT	cotton	1	US	Mississippi Portal		1998	USDA ARMS	means	NS						Y
Klotz-Ingram et al. 1999	P	HT	cotton	1	US	Southern Seaboard		1998	USDA ARMS	means	NS						Y
Wossink et al. 2006	P	HT	cotton	1	US	North Carolina		2000	USDA ARMS	means	-3.0%		-27%		-		Y
Marra et al. 2005	N	HT	cotton	1	US	North Carolina		2001	293 farmers	within-farm comparison	NS						Y
Qaim et al. 2005b	P	HT	soybeans	2	Argentina	Buenos Aires, Santa Fe and Chaco	"recent three year average"; survey conducted in 2001		59 farmers	within-farm comparison	NS	21%	-43%		+		Y
Hategekimana 2002	G	HT	soybeans	1	Canada	Ontario		2000	Statistics Canada 2000 November Farm Surveys and 2000 June Farm Surveys	means	2.6%						N
Hategekimana 2002	G	HT	soybeans	1	Canada	Quebec		2000	Statistics Canada 2000 November Farm Surveys and 2000 June Farm Surveys	means	4.3%						N
Hategekimana 2002	G	HT	soybeans	1	Canada	Ontario		2001	Statistics Canada 2001 June Farm Surveys	means	3.8%						N

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Hategekimana 2002	G	HT	soybeans	1	Canada	Quebec		2001	Statistics Canada 2001 June Farm Surveys	means	9.9%						N
Brethour et al. 2002	N	HT	soybeans	1	Canada	Ontario		2000-01	325 farmers	means	NS	37%	-77%				Y
Brookes 2005	P	HT	soybeans	2	Romania	Calarasi and Ialomita Counties	farms <5000 ha	2002-03	surveyed farmers accounted for 13% and 25% of soybean acreage in Calarasi and Ialomita counties	means	29.0%			-28%	+		N
Brookes 2005	P	HT	soybeans	2	Romania	Calarasi and Ialomita Counties	farms >=5000 ha	2002-03	surveyed farmers accounted for 13% and 25% of soybean acreage in Calarasi and Ialomita counties	means	35.0%			-27%	+		N
Lin et al. 2001	G	HT	soybeans	1	US	Eastern Uplands		1997	USDA ARMS	means	5.0%			-34%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Eastern Uplands		1997	USDA ARMS	econometric model				-34%			Y
Fernandez-Cornejo et al. 2000	G	HT	soybeans	1	US	Heartland		1997	USDA ARMS	means		70%	-32%		+		Y
Lin et al. 2001	G	HT	soybeans	1	US	Heartland		1997	USDA ARMS	means	14.2%			-31%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Heartland		1997	USDA ARMS	econometric model				-11%			Y
Fernandez-Cornejo et al. 2000	G	HT	soybeans	1	US	Mississippi Portal		1997	USDA ARMS	means		79%	-27%		0		Y
Lin et al. 2001	G	HT	soybeans	1	US	Mississippi Portal		1997	USDA ARMS	means	NS			-27%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Mississippi Portal		1997	USDA ARMS	econometric model				-4%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Nationwide		1997	USDA ARMS	econometric model	3.0%						Y
Lin et al. 2001	G	HT	soybeans	1	US	Northern Crescent		1997	USDA ARMS	means	NS			NS			Y
Lin et al. 2001	G	HT	soybeans	1	US	Northern Crescent		1997	USDA ARMS	econometric model				-12%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Northern Great Plains		1997	USDA ARMS	means	10.8%			9%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Prairie Gateway		1997	USDA ARMS	means	20.0%			NS			Y
Lin et al. 2001	G	HT	soybeans	1	US	Prairie Gateway		1997	USDA ARMS	econometric model				-1%			Y
Fernandez-Cornejo et al. 2000	G	HT	soybeans	1	US	Southern Seaboard		1997	USDA ARMS	means		87%	-49%		0		Y
Lin et al. 2001	G	HT	soybeans	1	US	Southern Seaboard		1997	USDA ARMS	means	16.1%			-45%			Y
Lin et al. 2001	G	HT	soybeans	1	US	Southern Seaboard		1997	USDA ARMS	econometric model				-4%			Y
Duffy et al. 1999	N	HT	soybeans	1	US	Iowa		1998	365 soybean fields from USDA Costs and Returns Survey	means	-3.8%	40%	-30%		-		N
Fernandez-Cornejo et al. 2002	G	HT	soybeans	1	US	Nationwide		1998	USDA ARMS	econometric model					0		Y
Bernard et al. 2004	P	HT	soybeans	1	US	Delaware		1999	116 farmers	econometric model	10.0%						Y
Duffy 2001	N	HT	soybeans	1	US	Iowa		2000	172 soybean fields from USDA Costs and Returns Survey	means	-3.6%	21%	-24%		-		N
Marra et al. 2005	N	HT	soybeans	1	US	North Carolina		2001	293 farmers	within-farm comparison	NS						Y
Marra et al. 2004	P	HT	soybeans	1	US	19 major soybean-growing states		2001-02	610 farmers	within-farm comparison	NS	79%	-33%		+		Y
Kniss 2008	N	HT	sugarbeet	1	US	Wyoming		2007	15 paired fields	paired comparison	NS			-68%	+		Y

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Wossink et al. 2006	P	HT/IR	cotton	1	US	North Carolina		2000	USDA ARMS	means	-3.0%		-35%		-		Y
Cattaneo et al. 2006	P	HT/IR	cotton	1	US	Arizona		2002-03	81 farms	econometric model	8.6%						Y
Hategekimana 2002	G	IR	corn	1	Canada	Ontario		2000	Statistics Canada 2000 November Farm Surveys and 2000 June Farm Surveys	means	4.6%						N
Hategekimana 2002	G	IR	corn	1	Canada	Quebec		2000	Statistics Canada 2000 November Farm Surveys and 2000 June Farm Surveys	means	12.8%						N
Hategekimana 2002	G	IR	corn	1	Canada	Ontario		2001	Statistics Canada 2001 June Farm Surveys	means	7.7%						N
Hategekimana 2002	G	IR	corn	1	Canada	Quebec		2001	Statistics Canada 2001 June Farm Surveys	means	-2.6%						N
Yorobe et al. 2006	P	IR	corn	2	Philippines	Bukidnon	first cropping	2003/04	407 farmers across all study areas	means	NS		139%		-		Y
Yorobe et al. 2006	P	IR	corn	2	Philippines	Bukidnon	second cropping	2003/04	407 farmers across all study areas	means	NS		-100%		-		Y
Yorobe et al. 2006	P	IR	corn	2	Philippines	Camarines Sur	first cropping	2003/04	407 farmers across all study areas	means	37.4%		-55%		+		Y
Yorobe et al. 2006	P	IR	corn	2	Philippines	Isabela	second cropping	2003/04	407 farmers across all study areas	means	18.3%		-47%		+		Y
Gonzales 2005	N	IR	corn	2	Philippines	Isabela, Camarines Sur, Bukidnon and South Cotabato provinces	wet season	2003/04	523 farmers	means	27.0%				+		N
Gonzales 2005	N	IR	corn	2	Philippines	Isabela, Camarines Sur, Bukidnon and South Cotabato provinces	dry season	2003/04	523 farmers	means	34.0%				+		N
Yorobe et al. 2006	P	IR	corn	2	Philippines	Isabela, Camarines Sur, Bukidnon and South Cotabato provinces		2003/04	407 farmers across all study areas	means	34.0%		-52%		+		Y
Yorobe et al. 2006	P	IR	corn	2	Philippines	Isabela, Camarines Sur, Bukidnon and South Cotabato provinces		2003/04	407 farmers	econometric model-Cobb-Douglas	22.5%						Y
Yorobe et al. 2006	P	IR	corn	2	Philippines	South Cotabato	second cropping	2003/04	407 farmers across all study areas	means	37.5%		-68%		+		Y
Gonzales 2005	N	IR	corn	2	Philippines	Isabela, Camarines Sur, Bukidnon and South Cotabato provinces	wet season	2004/05	569 farmers	means	20.0%				+		N

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Gonzales 2005	N	IR	corn	2	Philippines	Isabela, Camarines Sur, Bukidnon and South Cotabato provinces	dry season	2004/05	569 farmers	means	24.0%				+		N
Gouse et al. 2005	P	IR	corn	2	South Africa	Mpumalanga	irrigated	2000/01-2001/02	33 farmers	means	7.0%		-65%		+		Y
Gouse et al. 2005	P	IR	corn	2	South Africa	Mpumalanga	dryland	2000/01-2001/02	33 farmers	means	11.0%		-51%		+		Y
Gouse et al. 2005	P	IR	corn	2	South Africa	North West		2000/01-2001/02	33 farmers	means	7.0%		-80%		+		Y
Gouse et al. 2005	P	IR	corn	2	South Africa	Northern Cape		2000/01-2001/02	33 farmers	means	12.0%		-59%		+		Y
Gouse et al. 2009	P	IR	corn	2	South Africa	KwaZulu Natal		2006/07	249 farmers	means	6.0%	33%	-29%		+		N
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Albacete		2002	69 observations	means	NS	NS	-70%		+		Y
Brookes 2002	N	IR	corn	1	Spain	Huesca		2002	500 farmers	unclear	10.0%	12%	-38%		+		N
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Lleida		2002	21 observations	means	NS	NS	-72%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Zaragoza		2002	88 observations	means	12.0%	23%	-62%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Albacete		2003	77 observations	means	NS	NS	-70%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Lleida		2003	34 observations	means	NS	NS	-72%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Zaragoza		2003	118 observations	means	10.9%	28%	-62%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Albacete		2004	88 observations	means	NS	NS	-70%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Lleida		2004	51 observations	means	NS	NS	-72%		+		Y
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain	Zaragoza		2004	129 observations	means	11.6%	23%	-62%		+		Y
Fernandez-Cornejo et al. 2002	G	IR	corn	1	US	Eastern Heartland		1998	USDA ARMS	econometric model					-		Y
Duffy et al. 1999	N	IR	corn	1	US	Iowa		1998	377 corn fields from USDA Cost and Return Survey	means	8.6%	32%	18%		+		N
Fernandez-Cornejo et al. 2002	G	IR	corn	1	US	Northern Crescent		1998	USDA ARMS	econometric model					0		Y
Fernandez-Cornejo et al. 2002	G	IR	corn	1	US	Other regions		1998	USDA ARMS	econometric model					0		Y
Fernandez-Cornejo et al. 2002	G	IR	corn	1	US	Prairie Gateway		1998	USDA ARMS	econometric model					0		Y
Fernandez-Cornejo et al. 2002	G	IR	corn	1	US	Western Heartland		1998	USDA ARMS	econometric model					-		Y
Fernandez-Cornejo et al. 2002	G	IR	corn	1	US			1998	USDA ARMS	econometric model					+		Y
Duffy 2001	N	IR	corn	1	US	Iowa		2000	174 corn fields from USDA Cost and Return Survey	means	2.0%	15%			-		N
Fernandez-Cornejo et al. 2005	N	IR	corn	1	US	Nationwide		2001	USDA ARMS	means	9.0%						N
Fernandez-Cornejo et al. 2005	N	IR	corn	1	US	Nationwide		2001	USDA ARMS	econometric model	3.9%						Y
Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Eastern Cape	Mqanduli	2001/02	40 farmers	means	NS						Y yield in kg/kg of seed
Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Eastern Cape	Flagstaff	2001/02	60 farmers	means	34.0%						Y yield in kg/kg of seed

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Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Kwazulu-Natal		2001/02	58 farmers	means	30.0%						Y yield in kg/kg of seed
Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Limpopo		2001/02	60 farmers	means	62.0%						Y yield in kg/kg of seed
Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Mpumalanga-Northern Highveld		2001/02	60 farmers	means	32.0%						Y yield in kg/kg of seed
Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Mpumalanga-Southern Highveld		2001/02	90 farmers	means	21.0%						Y yield in kg/kg of seed
Gouse et al. 2006b	P	IR	corn (white)	2	South Africa	Kwazulu-Natal		2002/03	104 farmers	means	16.0%						Y yield in kg/kg of seed
Gouse et al. 2006a	P	IR	corn (white)	2	South Africa	Kwazulu-Natal		2003/04	135 farmers	means	NS						N yield in kg/kg of seed
Gouse et al. 2006a	P	IR	corn (white)	2	South Africa	Kwazulu-Natal		2003/04	135 farms	econometric model	NS						N yield in kg/kg of seed
de Bianconi 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		1999/2000	32 farmers	within-farm comparison	17.5%	351%	-55%		+	N	
Qaim et al. 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		1999/2000	299 farmers	within-farm comparison	32.0%	616%	-47%		+	Y	
de Bianconi 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		2000/01	41 farmers	within-farm comparison	63.0%	234%	-70%		+	N	
Qaim et al. 2005a	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		2000/01	299 farmers	econometric model	32.0%					Y	
Qaim et al. 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		2000/01	299 farmers	within-farm comparison	34.0%	463%	-46%		+	Y	
Fitt 2003	P	IR	cotton	1	Australia			1996/97	210 paired fields	paired comparison	-6.4%			9%	-	N	
Fitt 2003	P	IR	cotton	1	Australia			1997/98	179 paired fields	paired comparison	0.0%			8%	+	N	
Fitt 2003	P	IR	cotton	1	Australia			1998/99	110 paired fields	paired comparison	-7.6%		-32%	-12%	+	N	
Fitt 2003	P	IR	cotton	1	Australia			1999/2000	149 paired fields	paired comparison	0.0%			-13%	+	N	
Doyle et al. 2002a	N	IR	cotton	1	Australia			2000/01	130 paired fields	paired comparison	3.4%					Y	
Doyle et al. 2002b	N	IR	cotton	1	Australia			2001/02	229 paired fields	paired comparison	5.0%			-35%		Y	
Huang et al. 2002a	P	IR	cotton	2	China	Hebei and Shandong		1999	283 farmers	means	5.8%	333%	-58%		+	N	
Huang et al. 2002b	P	IR	cotton	2	China	Hebei and Shandong		1999	283 farmers	econometric model-Cobb-Douglas	15.0%					Y	
Huang et al. 2002b	P	IR	cotton	2	China	Hebei and Shandong		1999	283 farmers	econometric model-damage abatement (Weibull)	7.3%					Y	
Huang et al. 2002b	P	IR	cotton	2	China	Hebei and Shandong		1999	283 farmers	econometric model-damage abatement (exponential)	6.5%					Y	
Huang et al. 2002a	P	IR	cotton	2	China	Shandong		1999	258 plots	means	9.0%					N	

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Huang et al. 2002a	P	IR	cotton	2	China	Hebei, Shandong and Henan		2000	407 farmers	means	55.0%	181%	-56%		+		N
Huang et al. 2002a	P	IR	cotton	2	China	Henan		2000	258 plots	means	18.0%						N
Huang et al. 2002a	P	IR	cotton	2	China	Anhui		2001	235 plots	means	7.3%						N
Huang et al. 2002a	P	IR	cotton	2	China	Hebei, Shandong, Henan, Anhui and Jiangsu		2001	366 farmers	means	11.0%	-2%	-82%		+		N
Huang et al. 2002a	P	IR	cotton	2	China	Henan		2001	158 plots	means	6.7%						N
Huang et al. 2002a	P	IR	cotton	2	China	Jiangsu		2001	120 plots	means	6.0%						N
Wang et al. 2008	P	IR	cotton	2	China	Hebei, Shandong, Henan, Anhui and Hubei		2004	481 households	means	6.0%				-		N
Huang et al. 2002a	P	IR	cotton	2	China	Hebei, Shandong, Henan, Anhui and Jiangsu		1999-2001	283 farmers in 1999, 407 farmers in 2000 and 366 farmers in 2001	means	11.0%						N
Huang et al. 2002a	P	IR	cotton	2	China	Hebei, Shandong, Henan, Anhui and Jiangsu		1999-2001	283 farmers in 1999, 407 farmers in 2000 and 366 farmers in 2001	econometric model-Cobb-Douglas	8.3%						N
Huang et al. 2002a	P	IR	cotton	2	China	Hebei, Shandong, Henan, Anhui and Jiangsu		1999-2001	283 farmers in 1999, 407 farmers in 2000 and 366 farmers in 2001	econometric model-damage control	9.6%						N
Zambrano et al. 2009	P	IR	cotton	2	Colombia	Tolima		2007	15 farmers	with-in farm comparison	35.0%	128%	41%				Y
Zambrano et al. 2009	P	IR	cotton	2	Colombia	Tolima		2007	131 farmers	econometric model	113.0%						Y
Zambrano et al. 2009	P	IR	cotton	2	Colombia	Cordoba		2007/08	133 farmers	means	9.0%	81%	-16%		+		Y
Zambrano et al. 2009	P	IR	cotton	2	Colombia	Cordoba and Sucre		2007/08	233 farmers	econometric model	NS						Y
Zambrano et al. 2009	P	IR	cotton	2	Colombia	Sucre		2007/08	100 farmers	means	18.0%	145%	18%		-		Y
Barwale et al. 2004	P	IR	cotton	2	India	Andhra Pradesh		2002	1069 farmers across all study areas	means	42.0%				+		N
Barwale et al. 2004	P	IR	cotton	2	India	Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Tamil Nadu		2002	1069 farmers across all study areas	means	30.0%				+		N
Barwale et al. 2004	P	IR	cotton	2	India	Gujarat		2002	1069 farmers across all study areas	means	43.0%				+		N
Barwale et al. 2004	P	IR	cotton	2	India	Karnataka		2002	1069 farmers across all study areas	means	70.0%				+		N
Barwale et al. 2004	P	IR	cotton	2	India	Madhya Pradesh		2002	1069 farmers across all study areas	means	72.0%				+		N
Barwale et al. 2004	P	IR	cotton	2	India	Maharashtra		2002	1069 farmers across all study areas	means	44.0%				+		N

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Bennett et al. 2004b	P	IR	cotton	2	India	Maharashtra		2002	2709 farmers	means	45.0%	232%	-48%		+	Y	
Crost et al. 2007	P	IR	cotton	2	India	Maharashtra		2002	338 farmers	means	47.0%	227%	-13%			Y	
Morse et al. 2007	P	IR	cotton	2	India	Maharashtra		2002	157 farmers	within-farm comparison	43.0%	207%	10%		+	Y	
Kambhampati et al. 2006	P	IR	cotton	2	India	Maharashtra		2002	2709 farmers	econometric model	49.0%					Y	
Sahai et al. 2003	P	IR	cotton	2	India	Maharashtra and Andhra Pradesh		2002	100 paired plots	means		300%	-14%			N	
Sahai et al. 2003	P	IR	cotton	2	India	Maharashtra and Andhra Pradesh	low yielding fields	2002	100 paired plots	means	-15.0%				-	N	
Sahai et al. 2003	P	IR	cotton	2	India	Maharashtra and Andhra Pradesh	medium yielding fields	2002	100 paired plots	means	-14.0%				-	N	
Sahai et al. 2003	P	IR	cotton	2	India	Maharashtra and Andhra Pradesh	high yielding fields	2002	100 paired plots	means	-17.0%				-	N	
Bennett et al. 2004b	P	IR	cotton	2	India	Maharashtra		2003	787 farmers	means	63.0%	217%	-57%		+	Y	
Crost et al. 2007	P	IR	cotton	2	India	Maharashtra		2003	338 farmers	means	48.0%	229%	-14%			Y	
Morse et al. 2007	P	IR	cotton	2	India	Maharashtra		2003	157 farmers	within-farm comparison	27.0%	165%	-60%		+	Y	
Gandhi et al. 2006	N	IR	cotton	2	India	Andhra Pradesh		2004	180 farmers	means	45.0%	173%	-26%		+	N	
IMRB 2005	N	IR	cotton	2	India	Andhra Pradesh		2004	640 farmers	means	46.0%		-88%		+	N	
Gandhi et al. 2006	N	IR	cotton	2	India	Gujarat		2004	180 farmers	means	35.0%	137%	-22%		+	N	
IMRB 2005	N	IR	cotton	2	India	Gujarat		2004	638 farmers	means	259.0%		-79%		+	N	
Gandhi et al. 2006	N	IR	cotton	2	India	Gujarat, Maharashtra, Andhra Pradesh and Tamil Nadu		2004	694 farmers	econometric model	31.0%					N	
IMRB 2005	N	IR	cotton	2	India	Karnataka		2004	323 farmers	means	33.0%		-62%		+	N	
IMRB 2005	N	IR	cotton	2	India	Madhya Pradesh		2004	644 farmers	means	42.0%		-79%		+	N	
Gandhi et al. 2006	N	IR	cotton	2	India	Maharashtra		2004	154 farmers	means	46.0%	192%	-21%		+	N	
IMRB 2005	N	IR	cotton	2	India	Maharashtra		2004	638 farmers	means	50.0%		-82%		+	N	
Gandhi et al. 2006	N	IR	cotton	2	India	Tamil Nadu		2004	180 farmers	means	29.0%	237%	-54%		+	N	
IMRB 2005	N	IR	cotton	2	India	Tamil Nadu		2004	316 farmers	means	27.0%		-72%		+	N	
Qayum et al. 2003	N	IR	cotton	2	India	Andhra Pradesh		2002/03	225 farmers	means	-35.0%	256%	-2%		-	N	
Qaim et al. 2006	P	IR	cotton	2	India	Andhra Pradesh		2002/03	135 observations	means	NS		NS		0	Y	
Govt. of AP 2003	G	IR	cotton	2	India	Andhra Pradesh/NT Zone		2002/03	3709 farmers across all study areas	means	-25.0%		-5%		-	N	
Govt. of AP 2003	G	IR	cotton	2	India	Andhra Pradesh/Scarce rainfall zone		2002/03	3709 farmers across all study areas	means	-17.5%	318%	-58%		-	N	
Govt. of AP 2003	G	IR	cotton	2	India	Andhra Pradesh/ST Zone		2002/03	3709 farmers across all study areas	means					-	N	
Orphal 2005	N	IR	cotton	2	India	Karnataka	irrigated	2002/03	100 farmers across all categories surveyed	within-farm comparison	NS	302%	-61%		0	Y	
Orphal 2005	N	IR	cotton	2	India	Karnataka	non-irrigated	2002/03	100 farmers across all categories surveyed	within-farm comparison	NS	303%	NS		0	Y	
Pemsl et al. 2004	P	IR	cotton	2	India	Karnataka	irrigated	2002/03	44 observations	means	13.0%	304%			+	N	
Pemsl et al. 2004	P	IR	cotton	2	India	Karnataka	non-irrigated	2002/03	132 observations	means	-2.0%	307%			-	N	
Qaim et al. 2006	P	IR	cotton	2	India	Karnataka		2002/03	117 observations	means	73.0%		-49%		+	Y	
Qaim et al. 2006	P	IR	cotton	2	India	Maharashtra		2002/03	141 observations	means	32.0%		-44%		+	Y	

	Peer-reviewed (P) or government report	Technology	Crop	Developed (1) or Developing (2)	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	% change [(genetically engineered-conventional)/ conventional] unless otherwise noted	% change costs [(genetically engineered-conventional)/ conventional]			direction of change (genetically engineered-conventional)	statistical analysis presented?	additional notes
												yield	seed including tech fee	pesticides			
Ramasundaram et al. 2007	P	IR	cotton	2	India	Maharashtra		2002/03	56 farmers	within-farm comparison	21.0%	172%	-54%		+	N	
Naik et al. 2005	P	IR	cotton	2	India	Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu		2002/03	341 farmers	means	34.0%	221%	-41%		+	Y	
Naik et al. 2005	P	IR	cotton	2	India	Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu		2002/03	341 farmers	econometric model	37.0%					Y	
Qaim et al. 2006	P	IR	cotton	2	India	Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu		2002/03	341 farmers	econometric model	27.0%					Y	
Qaim et al. 2006	P	IR	cotton	2	India	Tamil Nadu		2002/03	41 observations	means	43.0%		-73%		+	Y	
Crost et al. 2007	P	IR	cotton	2	India	Maharashtra		2002-03	338 farmers	econometric model-pooled	92.0%					Y	
Crost et al. 2007	P	IR	cotton	2	India	Maharashtra		2002-03	338 farmers	econometric model-fixed-effects	31.0%					Y	
Kambhampati et al. 2006	P	IR	cotton	2	India	Maharashtra		2002-03	2709 farmers in 2002 and 787 farmers in 2003	econometric model	50.0%					Y	
Qayum et al. 2006	N	IR	cotton	2	India	Andhra Pradesh		2003/04	164 farmers	means	3.3%	230%	-12%		-	N	
Sahai et al. 2004	P	IR	cotton	2	India	Andhra Pradesh		2003/04	136 farms	means	0.0%		-8%			N	
Bennett et al. 2005	P	IR	cotton	2	India	Gujarat	MECH 12	2003/04	622 farmers	means	37.0%	201%	-25%		+	Y	
Bennett et al. 2005	P	IR	cotton	2	India	Gujarat	MECH 162	2003/04	622 farmers	means	20.0%	204%	-43%		+	Y	
Ramasundaram et al. 2007	P	IR	cotton	2	India	Maharashtra		2003/04	50 farmers	within-farm comparison	30.0%	189%	-51%		+	N	
Dev et al. 2007	N	IR	cotton	2	India	Andhra Pradesh		2004/05	623 farmers	means	32.0%	134%	-18%		+	Y	
Dev et al. 2007	N	IR	cotton	2	India	Andhra Pradesh		2004/05	623 farmers	econometric model	36.0%					Y	
Qayum et al. 2006	N	IR	cotton	2	India	Andhra Pradesh		2004/05	220 farmers	within-farm comparison	5.3%	217%	-8%		-	N	
Subramanian et al. 2009	P	IR	cotton	2	India	Maharashtra		2004/05	155 observations	means	39.0%					Y	
Subramanian et al. 2009	P	IR	cotton	2	India	Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu		2004/05	465 observations	means	35.0%					Y	
Lalitha et al. 2009	P	IR	cotton	2	India	Gujarat		2005/06	328 plots	medians	122.0%					N	
Lalitha et al. 2009	P	IR	cotton	2	India	Maharashtra		2005/06	349 plots	medians	25.0%					N	
Lalitha et al. 2009	P	IR	cotton	2	India	Gujarat		2006/07	403 plots	medians	150.0%					N	
Lalitha et al. 2009	P	IR	cotton	2	India	Maharashtra		2006/07	426 plots	medians	40.0%					N	
Lalitha et al. 2009	P	IR	cotton	2	India	Gujarat		2007/08	337 plots	medians	82.0%					N	
Lalitha et al. 2009	P	IR	cotton	2	India	Maharashtra		2007/08	390 plots	medians	24.0%					N	
Traxler et al. 2003	P	IR	cotton	2	Mexico	Coahuila and Durango		1997	152 observations	means	2.6%	154%	-73%		+	N	
Traxler et al. 2003	P	IR	cotton	2	Mexico	Coahuila and Durango		1998	242 observations	means	20.4%	180%	-81%		+	N	
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		1998/99	1283 farmers	means	63.0%	101%	-53%		+	Y	
Ismael et al. 2002	P	IR	cotton	2	South Africa	KwaZulu Natal		1998/99	100 farmers	means	NS	102%	NS		0	Y	

										% change [(genetically engineered-conventional)/ conventional] unless otherwise noted	% change costs [(genetically engineered-conventional)/ conventional]			direction of change (genetically engineered-conventional)			
	Peer-reviewed (P) or government report	Technology	Crop	Developed (1) or Developing (2)	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	yield	seed including tech fee	pesticides	seed and pesticides	economic performance (+, 0, -)	statistical analysis presented?	additional notes
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		1998/99-2000/01	1283 growers in 1998/99, 441 growers in 1999/2000 and 499 growers in 2000/01	econometric model	65.0%					Y	
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		1999/2000	441 farmers	means	85.0%	117%	-53%		+	Y	
Ismail et al. 2002	P	IR	cotton	2	South Africa	KwaZulu Natal		1999/2000	100 farmers	means	NS	116%	-38%		+	Y	
Shankar et al. 2008	P	IR	cotton	2	South Africa	KwaZulu Natal		1999/2000	100 farmers	production function-damage control model	22.0%					Y	
Shankar et al. 2008	P	IR	cotton	2	South Africa	KwaZulu Natal		1999/2000	100 farmers	production function-SSH model	21.0%					Y	
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		2000/01	499 farmers	means	56.0%	48%	-63%		+	Y	
Gouse et al. 2003	P	IR	cotton	2	South Africa	Mpumalanga and Limpopo	irrigated	2000/01	43 farmers	means	19.0%		-56%		+	Y	
Gouse et al. 2003	P	IR	cotton	2	South Africa	Mpumalanga and Limpopo	dryland	2000/01	43 farmers	means	14.0%		-59%		+	Y	
Fok et al. 2008	N	IR	cotton	2	South Africa	KwaZulu Natal		2002/03	56 farmers	means	NS	91%	-27%		0	Y	
Hofs et al. 2006	P	IR	cotton	2	South Africa	KwaZulu Natal		2002/03	20 farmers	means	NS		13%		0	Y	
Hofs et al. 2006	P	IR	cotton	2	South Africa	KwaZulu Natal		2003/04	20 farmers	means	NS		NS		0	Y	
Cooke et al. 1998	N	IR	cotton	1	US	Mississippi		1996	160 farmers	within-farm comparison	-5.0%			0%		N	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Mississippi Portal		1996	USDA ARMS	means	8.6%					Y	
Carlson et al. 1998	N	IR	cotton	1	US	Southeast		1996	300 farmers	means	11.4%				+	Y	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	Alabama		1997	Enhanced Market Data survey	paired comparison	2.9%					N	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	Arkansas		1997	Enhanced Market Data survey	paired comparison	-0.4%					N	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	East Texas		1997	Enhanced Market Data survey	paired comparison	2.6%					N	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Fruitful Rim		1997	USDA ARMS	means	NS					Y	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	Georgia		1997	Enhanced Market Data survey	paired comparison	22.0%					N	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	Louisiana		1997	Enhanced Market Data survey	paired comparison	8.1%					N	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	Mississippi		1997	Enhanced Market Data survey	paired comparison	4.9%					N	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Mississippi Portal		1997	USDA ARMS	means	NS					Y	
Price et al. 2003	G	IR	cotton	1	US	Mississippi Portal		1997	Enhanced Market Data survey	econometric model	3.7%		-54%			Y	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	North Carolina		1997	Enhanced Market Data survey	paired comparison	4.8%					N	
Falck-Zepeda et al. 2000	P	IR	cotton	1	US	South Carolina		1997	Enhanced Market Data survey	paired comparison	2.3%					N	
Fernandez-Cornejo et al. 2002	G	IR	cotton	1	US	Southeast		1997	USDA ARMS	econometric model	21.0%				+	Y	

											% change [(genetically engineered-conventional)/ conventional] unless otherwise noted	% change costs [(genetically engineered-conventional)/ conventional]			direction of change (genetically engineered-conventional)		
	Peer-reviewed (P) or government report	Technology	Crop	Developed (1) or Developing (2)	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	yield	seed including tech fee	pesticides	seed and pesticides	economic performance (+, 0, -)	statistical analysis presented?	additional notes
Fernandez-Cornejo et al. 2002	G	IR	cotton	1	US	Southern Seaboard		1997	USDA ARMS	econometric model	21.0%		-7%			Y	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Southern Seaboard		1997	USDA ARMS	means	19.6%					Y	
Price et al. 2003	G	IR	cotton	1	US	Southern Seaboard		1997	Enhanced Market Data survey	econometric model	11.3%		-60%			Y	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US			1997	USDA ARMS	econometric model	positive				+	Y	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Fruitful Rim		1998	USDA ARMS	means	26.1%					Y	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Mississippi Portal		1998	USDA ARMS	means	15.0%					Y	
Klotz-Ingram et al. 1999	P	IR	cotton	1	US	Southern Seaboard		1998	USDA ARMS	means	NS					Y	
Cattaneo et al. 2006	P	IR	cotton	1	US	Arizona		2002-03	81 farms	econometric model	8.6%					Y	
Notes:																	
IR-Insect Resistant																	
HT-Herbicide Tolerant																	
NS-Not Significant																	
See Supplementary Table 3 for full references.																	
The bibliography includes all available english-language published results of farmer surveys that compare yields and other indicators of economic performance for GE crops and their conventional counterparts. Literature searches were conducted using Agricola and CAB abstracts databases; conference proceedings were reviewed; reference lists were checked; and experts in the field were contacted. The cut-off date for inclusion in the review is August 2009. Only peer-reviewed studies were included in the statistical analysis presented in the paper.																	
The bibliography does not include all publications where the results of these surveys have been published, as in many cases the same results have been published in more than one outlet. Where the same result has been published more than once, it is included only once in the annotated bibliography and in the calculation of any statistics and the earliest publication is used as the reference. If the same result was published more than once in the same year, the earliest reference is included here. Where a result is reported differently from one publication to another, i.e. the same statistic from the same survey, the latter published result is included here. Results for the smallest geographic unit are reported as opposed to aggregated results. Where both within farm and across farm comparisons are reported, only within farm comparisons are included here.																	
There is a potential for bias in farmer surveys that can over- or under-state the impact of the technology if there are any systematic differences between adopters and non-adopters. Bias may result from farmers investing more resources in their GE fields, but also from adopters being better managers, which can overstate the impact of the technology. On the other hand, bias can also result from GE crops being planted in areas with greater pest problems, which would understate the impact of the technology. Also, it is increasingly recognized that conventional growers are benefitting from the wide scale planting of Bt crops, due to area wide pest suppression, which again understates the impact of the technology in these types of comparisons. Researchers attempt to control for bias by using with-in farm comparisons, which effectively control for farmer characteristics, and econometric methods, which attempt to control for farmer characteristics and other factors.																	

Table 2. Environmental Impacts																		
Annotated bibliography of results comparing tillage and pesticide use of adopters and non-adopters of GE crops																		
	Peer-reviewed (P) or government report (G)?	Technology	Crop	Developed (1) or Developing (2) Country	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	Change (genetically engineered-conventional) or [(genetically engineered-conventional)/conventional]						statistical analysis presented?	additional notes
											# of tillage passes	% of tillage passes	amount of pesticide (kg/ha)	% of pesticide amount	# of pesticide applications	% of pesticide applications		
Serecon Management Consulting et al. 2001	N	HT	canola	1	Canada	Western Canada		2000	637 farmers	means	-0.84	-32%					N	
Wossink et al. 2006	P	HT	cotton	1	US	North Carolina		2000	USDA ARMS	means			-3.34	-21%			Y	
Qaim et al. 2005b	P	HT	soybeans	2	Argentina	Buenos Aires, Santa Fe and Chaco		"recent three year average"; survey conducted in 2001	59 farmers	within-farm comparison	-0.97	-58%	2.89	108%	0.33	16.80%	Y	herbicide use in l/ha
Marra et al. 2004	P	HT	soybeans	1	US	19 major soybean-growing states		2001-02	610 farmers	within-farm comparison	-0.34	-25%					Y	
Kniss 2008	N	HT	sugarbeet	1	US	Wyoming		2007	15 paired fields	paired comparison	-0.89	-49%					Y	
Wossink et al. 2006	P	HT/IR	cotton	1	US	North Carolina		2000	USDA ARMS	means			-5.9	-38%			Y	
Cattaneo et al. 2006	P	HT/IR	cotton	1	US	Arizona		2002	81 farms	means					-3.8	-58%	Y	insecticide use only; no significant difference in herbicide use
Cattaneo et al. 2006	P	HT/IR	cotton	1	US	Arizona		2003	81 farms	means					-2.1	-31%	Y	insecticide use only; no significant difference in herbicide use
Gomez-Barbero et al. 2008	G	IR	corn	1	Spain			2002-04	unclear for comparison of insecticide use	means					-0.54	-63%	Y	
Fernandez-Cornejo et al. 2005	N	IR	corn	1	US	Nationwide		2001	USDA ARMS	means					-8%			
Fernandez-Cornejo et al. 2005	N	IR	corn	1	US	Nationwide		2001	USDA ARMS	econometric model-pesticide use					-41%		Y	
de Bianconi 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		1999/2000	32 farmers	within-farm comparison					-2.4		N	
Qaim et al. 2005a	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		1999/2000	299 farmers	econometric model-pesticide use			-1.58				Y	
Qaim et al. 2005a	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		1999/2000	299 farmers	within-farm comparison			-1.26	-66%	-2.38	-53%	Y	
Qaim et al. 2005a	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		2000/01	299 farmers	econometric model-pesticide use			-0.85				Y	
de Bianconi 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		2000/01	41 farmers	within-farm comparison					-2.8		N	
Qaim et al. 2003	P	IR	cotton	2	Argentina	Chaco and Santiago del Estero		2000/01	299 farmers	within-farm comparison			-1.02	-43%	-2.23	-44%	Y	
Fitt 2003	P	IR	cotton	1	Australia			1996/97	210 paired fields	paired comparison					-5.3	-51%	N	
Fitt 2003	P	IR	cotton	1	Australia			1997/98	179 paired fields	paired comparison					-4.2	-41%	N	
Fitt 2003	P	IR	cotton	1	Australia			1998/99	110 paired fields	paired comparison					-5.3	-38%	N	
Fitt 2003	P	IR	cotton	1	Australia			1999/2000	149 paired fields	paired comparison					-4.1	-40%	N	
Doyle et al. 2002	N	IR	cotton	1	Australia			2000/01	130 paired fields	paired comparison					-5.3	-54%	Y	
Doyle et al. 2002	N	IR	cotton	1	Australia			2001/02	229 paired fields	paired comparison					-5.5	-64%	Y	
Huang et al. 2002a	P	IR	cotton	2	China	Shandong		1999	258 plots	means			-45.4	-75%			N	
Huang et al. 2002a	P	IR	cotton	2	China	Henan		2000	258 plots	means			-30.5	-63%			N	
Huang et al. 2002a	P	IR	cotton	2	China	Anhui		2001	235 plots	means			-56.4	-47%			N	
Huang et al. 2002a	P	IR	cotton	2	China	Henan		2001	158 plots	means			-20.7	-58%			N	

	Peer-reviewed (P) or government report (G)?	Technology	Crop	Developed (1) or Developing (2) Country	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	Change (genetically engineered-conventional) or [(genetically engineered-conventional)/conventional]						statistical analysis presented?	additional notes
											# of tillage passes	% of tillage passes	amount of pesticide (kg/ha)	% of pesticide amount	# of pesticide applications	% of pesticide applications		
Huang et al. 2002a	P	IR	cotton	2	China	Jiangsu		2001	120 plots	means			-6.9	-14%			N	
Wang et al. 2008	P	IR	cotton	2	China	Hebei, Shangdong, Henan, Anhui and Hubei		2004	481 households	means					-4	-17%	N	
Huang et al. 2002b	P	IR	cotton	2	China	Hebei, Shangdong, Henan, Anhui and Jiangsu		1999-2001	283 farmers in 1999, 407 farmers in 2000 and 366 farmers in 2001	econometric model-pesticide use			-43.3				Y	
Barwale et al. 2004	P	IR	cotton	2	India	Andhra Pradesh		2002	1069 farmers across all study areas	means					-2.73	-57%	N	
Barwale et al. 2004	P	IR	cotton	2	India	Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Tamil Nadu		2002	1069 farmers across all study areas	means					-1.93	-62%	N	
Barwale et al. 2004	P	IR	cotton	2	India	Gujarat		2002	1069 farmers across all study areas	means					-1.33	-38%	N	
Barwale et al. 2004	P	IR	cotton	2	India	Karnataka		2002	1069 farmers across all study areas	means					-1.53	-60%	N	
Barwale et al. 2004	P	IR	cotton	2	India	Madhya Pradesh		2002	1069 farmers across all study areas	means					-2.36	-71%	N	
Barwale et al. 2004	P	IR	cotton	2	India	Maharashtra		2002	1069 farmers across all study areas	means					-1.79	-64%	N	
Bennett et al. 2004b	P	IR	cotton	2	India	Maharashtra		2002	2709 farmers	means					-2.41	-40%	Y	
Bennett et al. 2004b	P	IR	cotton	2	India	Maharashtra		2003	787 farmers	means					-2.23	-42%	Y	
Gandhi et al. 2006	N	IR	cotton	2	India	Andhra Pradesh		2004	180 farmers	means					-3.84	-47%	N	
IMRB 2005	N	IR	cotton	2	India	Andhra Pradesh		2004	640 farmers	means					-6.2	-79%	N	
IMRB 2005	N	IR	cotton	2	India	Gujarat		2004	638 farmers	means					-2.8	-64%	N	
IMRB 2005	N	IR	cotton	2	India	Karnataka		2004	323 farmers	means					-4	-72%	N	
IMRB 2005	N	IR	cotton	2	India	Madhya Pradesh		2004	644 farmers	means					-2.9	-59%	N	
Gandhi et al. 2006	N	IR	cotton	2	India	Maharashtra		2004	154 farmers	means					-1.91	-36%	N	
IMRB 2005	N	IR	cotton	2	India	Maharashtra		2004	638 farmers	means					-3.1	-71%	N	
Gandhi et al. 2006	N	IR	cotton	2	India	Tamil Nadu		2004	180 farmers	means					-2	-33%	N	
IMRB 2005	N	IR	cotton	2	India	Tamil Nadu		2004	316 farmers	means					-5.4	-68%	N	
Qaim et al. 2006	P	IR	cotton	2	India	Andhra Pradesh		2002/03	135 observations	means					-1.8	-21%	Y	
Govt. of AP 2003	G	IR	cotton	2	India	Andhra Pradesh/Scarce rainfall zone		2002/03	3709 farmers across all study areas	means					-7	-50%	N	
Govt. of AP 2003	G	IR	cotton	2	India	Andhra Pradesh/ST Zone		2002/03	3709 farmers across all study areas	means					-1		N	
Pemsl et al. 2004	P	IR	cotton	2	India	Karnataka	irrigated	2002/03	100 farmers across all categories surveyed	means					-1.7	-46%	N	
Pemsl et al. 2004	P	IR	cotton	2	India	Karnataka	non-irrigated	2002/03							-0.5	-18%	N	
Qaim et al. 2006	P	IR	cotton	2	India	Karnataka		2002/03	117 observations	means					-2.75	-44%	Y	
Qaim et al. 2006	P	IR	cotton	2	India	Maharashtra		2002/03	141 observations	means					-5.7	-46%	Y	
Naik et al. 2005	P	IR	cotton	2	India	Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu		2002/03	341 farmers	means					-5.2	-50%	Y	
Qaim et al. 2006	P	IR	cotton	2	India	Tamil Nadu		2002/03	41 observations	means					-4.5	-76%	Y	
Subramanian et al. 2009	P	IR	cotton	2	India	Maharashtra		2004/05	155 observations	means					-3.26	-59%	Y	

	Peer-reviewed (P) or government report (G)?	Technology	Crop	Developed (1) or Developing (2) Country	Country	Sub-region	Additional descriptors	Crop year(s)	Survey information	Nature of comparison	Change (genetically engineered-conventional) or [(genetically engineered-conventional)/conventional]						statistical analysis presented?	additional notes
											# of tillage passes	% of tillage passes	amount of pesticide (kg/ha)	% of pesticide amount	# of pesticide applications	% of pesticide applications		
Subramanian et al. 2009	P	IR	cotton	2	India	Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu		2004/05	465 observations	means			-5.29	-51%			Y	
Lalitha et al. 2009	P	IR	cotton	2	India	Maharashtra		2005/06-2007/08	unclear for comparison of insecticide use	means				-0.77	-14%		N	
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		1998/99	1283 farmers	means			-0.55	-53%			Y	
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		1999/2000	441 farmers	means			-0.63	-40%			Y	
Shankar et al. 2008	P	IR	cotton	2	South Africa	KwaZulu Natal		1999/2000	100 farmers	means			-0.8	-33%			Y	
Bennett et al. 2004a	P	IR	cotton	2	South Africa	KwaZulu Natal		2000/01	499 farmers	means			-1.254	-63%			Y	
Fok et al. 2008	N	IR	cotton	2	South Africa	KwaZulu Natal		2002/03	56 farmers	means					-0.6	-24%	Y	
Hofs et al. 2006	P	IR	cotton	2	South Africa	KwaZulu Natal		2002/03	20 farmers	means					NS		Y	
Hofs et al. 2006	P	IR	cotton	2	South Africa	KwaZulu Natal		2003/04	20 farmers	means					-3.2	-48%	Y	
Carlson et al. 1998	N	IR	cotton	1	US	Southeast		1996	300 farmers	means					-2.03	-72%	Y	
Cattaneo et al. 2006	P	IR	cotton	1	US	Arizona		2002	81 farms	means					-3.2	-48%	Y	
Cattaneo et al. 2006	P	IR	cotton	1	US	Arizona		2003	81 farms	means					-1.7	-25%	Y	
Notes:																		
IR-Insect Resistant																		
HT-Herbicide Tolerant																		
NS-Not Significant																		
See Supplementary Table 3 for full references																		
Pesticide use estimates include only insecticides for IR crops, only herbicides for HT crops, and both for HT/IR crops.																		

Table 3. List of References	
List of complete references for studies cited in Supplementary Tables 1 and 2.	
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