Yield Reductions from Deep Soil Compaction

Data from 12 studies looking at compaction's effects on yield

			Yield Reduction	
Reference	**Crop**	**Country**	**1st Year**	**2nd Year**
Abu-Hamdeh (2003)	Corn	Jordan	27%	14%
Alblas, Wanink, van der Akker, and van der Werf (1994)	Corn silage	Netherlands	15%	NA[a]
Botta, Tolon-Becerra, Lastra-Bravo, and Tourn (2010)	Soybeans	Argentina	20%	15%
DeJong-Hughes and Coulter (2011)	Corn	USA	17%	NA
	Soybeans	USA	NA	16%
Gameda, Raghavan, McKyes, Watson, and Mehuys (1994)	Corn	Canada	47%	19%
	Corn	Canada	43%	16%
Gaultney, Krutz, Steinhardt, and Liljedahl (1982)	Corn	USA	55%	25%
Håkansson, Voorhees, and Riley (1988)	Corn	USA, Canada	10%[b]	
	Corn	USA, Canada	20%	
	Corn	USA, Canada	30%	
	Corn	USA, Canada	35%	
	Corn	USA, Canada	15%	
Nevens and Reheul (2003)	Corn silage	Belgium	13%	NA
Phillips and Kirkham (1962)	Corn	USA	11%	NA
	Corn	USA	15%	NA
	Corn	USA	22%	NA
	Corn	USA	24%	NA
	Corn	USA	26%	NA
	Corn	USA	41%	NA
	Corn	USA	36%	NA
	Corn	USA	53%	NA
Raghavan, McKyes, Taylor, Richard, and Waterson (1979)	Corn	Canada	50%	NA
	Corn	Canada	23%	NA
Sidhu and Duiker (2006)	Corn	USA	36%	7%
Wolkowski and Lowery (2008)	Corn	USA	28%	
	Corn	USA	14%	
	Corn	USA	42%	
	Corn	USA	9%	
Summary			**1st Year**	**2nd Year**
25th Percentile			15%	14%
50th Percentile			25%	16%
75th Percentile			40%	27%
25th Percentile (combined years)			15%	
50th Percentile[c] (combined years)			21%	
75th Percentile (combined years)			35%	

[a]NA = not available since data was not collected and reported in the publication. [b]Mean yield reductions reported, but time since the deep wheel-traffic compaction event not reported. [c]Median yield reduction.[1]Adapted from Daigh, ALM, DeJong-Hughes J, Acharya U. Projections of Yield Losses and Economic Costs Following Deep Wheel-traffic Compaction During the 2019 Harvest. *Agric Environ Lett. 2020;5:e20013.* https://doi.org/10.1002/ael2.20013, Table 1.