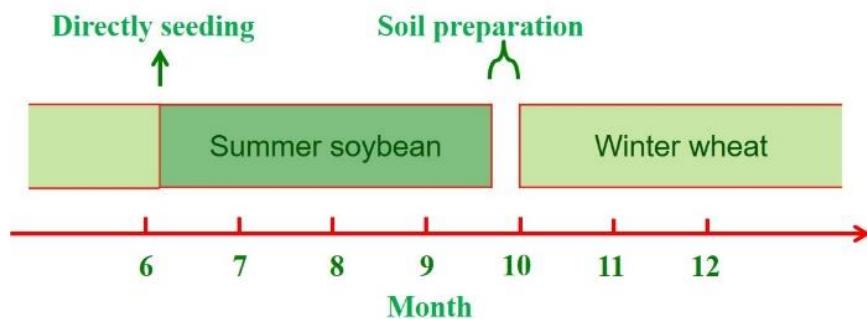


# Supplementary Materials: Integrating Straw Management and Seeding to Improve Seed Yield and Reduce Environmental Impacts in Soybean Production

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**Figure S1.** The winter wheat-summer soybean double cropping system in the Huang-Huai-Hai region of China.



**Figure S2.** Soil crust and soybean seedlings.

**Table S1.** The soybean yield of fields using precise direct seeding plus straw mulching cultivation technique in demonstration plots in the Huang-Huai-Hai region.

Year	Plot	Geographic Coordinates	Harvest Area	Soybean Yield
			(666.67 m <sup>2</sup> )	(kg ha <sup>-1</sup> )
2012	Shunyi, Beijing	E116.65°, N40.13°	10.0	4218.5
2013	Xinxiang, Henan	E113.91°, N35.37°	3.4	4668.6
2014	Xinxiang, Henan	E113.91°, N35.37°	1.2	4229.3
2015	Xinxiang, Henan	E113.91°, N35.37°	7.0	4738.1
2016	Xinxiang, Henan	E113.91°, N35.37°	4.2	4591.5
2016	Xinxiang, Henan	E113.91°, N35.37°	3.3	4720.5
2017	Xinxiang, Henan	E113.91°, N35.37°	2.1	4672.5
2017	Suzhou, Anhui	E116.98°, N33.64°	20.5	3586.1
2017	Shijiazhuang, Hebei	E114.54°, N38.04°	2.8	5227.5
2017	Cangzhou, Hebei	E116.87°, N38.31°	3.4	4846.5
2017	Zhengzhou, Henan	E113.64°, N34.72°	3.2	4986.0
2018	Huojia, Henan	E113.65°, N35.26°	4.5	4562.3
2018	Yuanyang, Henan	E113.94°, N35.07°	2.1	5021.0
2018	Xinxiang, Henan	E113.91°, N35.37°	4.9	5009.0
2018	Jiaxiang, Shandong	E116.34°, N35.41°	15.0	4807.5
2018	Liangshan, Shandong	E116.10°, N35.80°	60.4	4338.6
2019	Xinxiang, Henan	E113.91°, N35.37°	7.25	4690.1
2019	Huojia, Henan	E113.65°, N35.26°	100.4	4546.5
2020	Xinxiang, Henan	E113.91°, N35.37°	3.5	4518.6
2020	Huixian, Henan	E113.81°, N35.46°	110.1	4638.0
Average				4630.8
Variable coefficient				7.8%