

**Table S1.** Information on country, management practices studied, microbial analysis, duration, and sampling depth for each study included in the review.

Country	Study Type	Tillage or Residue Management Type*	Fertilizer Type*	Non-Wheat Crops*	Microbial Analysis Types	Duration (yrs)	Sampling Depth (cm)	Citation
China	tillage	reduced tillage**			microbial biomass***	8	0-5, 5-10, 10-20, 20-30	24
Australia	tillage	residue management			microbial biomass	9	0-10, 20-20	25
Iran	tillage	reduced tillage			bacteria counting, microbial biomass	2	0-10, 10-20, 20-30	26
United States	tillage, cropping	reduced tillage		barley, pea	microbial biomass	21	0-5, 5-20	27
China	tillage	reduced tillage			microbial biomass	17	0-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60	28
China	tillage	reduced tillage			enzyme analysis, microbial biomass	14	0-5, 5-10, 10-20, 20-30	29
China	tillage	reduced tillage, straw management			microbial biomass	2	0-10, 10-20	30
China	tillage	reduced tillage			microbial biomass	16	0-5, 5-10, 10-20, 20-30	31
China	tillage	reduced tillage, straw management			microbial biomass	22	0-5, 5-10, 10-20, 20-30, 30-40, 40-50, 50-60	32
Ethiopia	tillage	reduced tillage			microbial biomass	6	0-15, 15-30	33
China	tillage	plastic film mulch, reduced tillage, straw management			cultures, enzyme analysis	6	0-30	34
China	tillage	reduced tillage, straw management			microbial biomass	14	0-5, 5-10, 10-30	35
United States	tillage	reduced tillage			bacterial gene sequences	10	0-10	36
China	tillage	reduced tillage			bacterial gene sequences	6	0-20, 20-40, 40-60	37
Australia	tillage, fertilization	reduced tillage	inorganic fertilizer		EcoPlate, enzyme analysis, microbial biomass, terminal restruction fragment length polymorphism (TRFLP)	varied	0-15	38
China	tillage, fertilization	soybean residue management	inorganic fertilizer		enzyme analysis	6	0-20, 20-40	41
Australia	tillage	straw burning			microbial biomass	17	0-5	42

Canada	tillage, fertilization	straw management	Inorganic fertilizer		EcoPlate, enzyme analysis, microbial biomass	3	0-7.5	43
China	tillage	straw management			microbial biomass	8	0-10, 10-20	44
China	tillage, fertilization	straw management	inorganic fertilizer, manure		enzyme analysis, microbial biomass	25	0-15	45
China	tillage	plastic film mulch, straw management			bacterial gene sequences	5	0-20	46
China	tillage	plastic film mulch			AMF root colonization, enzyme analysis, fungal gene sequences, glomalin extraction	0.25	0-25	47
United States	tillage	reduced tillage			fungal gene sequences	9	10, 25, 50, 75, 100	50
United States	tillage, fertilization	reduced tillage	biosolids, inorganic fertilizer		fungal gene sequences	5	0-3	51
United States	tillage, fertilization	reduced tillage	biosolids, inorganic fertilizer		bacterial gene sequences	5	0-3	52
United States	tillage, cropping	reduced tillage		lentil	ELISA fungi test, glomalin extraction	12	0-5	53
United States	tillage	reduced tillage			fungal gene sequences	13	0-20	54
China	tillage	reduced tillage			bacterial gene sequences, fungal gene sequences	17	0-5, 5-10, 10-20, 20-30	55
United States	cropping			oat, pea, flax, rapeseed, lentil, vetch, clover, barley, safflower, phacelia	enzyme analysis, PLFA	1	0-5, 5-15	59
United States	cropping				microbial biomass	9	0-30	60
China	fertilization				microbial biomass	8	0-20, 20-40	61
United States	cropping			corn, millet	microbial biomass	12	0-2.5, 2.5-5	62
United States	tillage, cropping	reduced tillage		corn, millet	enzyme analysis, microbial biomass, PLFA	15	0-5, 5-15	63
United States	tillage, cropping	reduced tillage		lentil, pea	microbial biomass	6	0-20	64
United States	cropping				microbial biomass	varied	0-20	65
Australia	cropping			rye, lupin, canola, field	microbial biomass	2	0-10	66

				pea, vetch, lentils				
United States	cropping			pea	microbial biomass	8	0-15	67
United States	fertilization, cropping		grazing	pea, alfalfa, hay	enzyme analysis, microbial biomass	5	0-7.5, 7.5-15, 15-30	68
Canada	cropping			pea, lentil, vetch	culturing, enzyme analysis, microbial biomass	6	0-10	69
Canada	cropping			pea, lentil, canola	bacterial gene sequences	1	0-15	70
Canada	cropping			pea, lentil, chickpea	bacterial gene sequences	4	rhizosphere	71
Canada	cropping			chickpea, yellow pea	bacterial gene sequences	2	rhizosphere	72
Australia	tillage, fertilization, cropping	reduced tillage	inorganic phosphorus	pea, lupin, barley, canola, linseed, oat, tricale, hay	AMF root colonization	12		73
Australia	cropping			canola, pea, lupin	microbial biomass	3	0-10	74
United States	cropping			kernza, sorghum, soybean, hay	fungal gene sequences	13	0-10, 10-30	76
China	fertilization		inorganic nitrogen		bacterial gene sequences, microbial biomass	12	0-20	79
China	fertilization		inorganic nitrogen		bacterial gene sequences	8	0-20	80
China	fertilization		inorganic fertilizer, manure		bacterial gene sequences, fungal gene sequences, PLFA	35	0-20	82
Canada	fertilization, cropping		inorganic fertilizer		microbial biomass, PLFA	37	0-7.5	83
United States	tillage, fertilization	reduced tillage	grazing, inorganic fertilizer		bacterial gene sequences	4	0-15	86
United States	fertilization		inorganic fertilizer, manure		bacterial gene sequences, EcoPlate, enzyme analysis, fungal gene sequences, TRFLP	6	0-15, 15-30	87
United States	fertilization, cropping		compost	pea, tricale	enzyme analysis	5		88
United States	fertilization		compost		enzyme analysis, microbial biomass	16	0-5, 5-10, 10-30	89
Tunisia	tillage, fertilization	reduced tillage	compost, inorganic fertilizer		culturing, microbial biomass	3	0-20, 20-40	90

United States	fertilization	biosolids, inorganic fertilizer		PLFA	18	0-10	91
China	fertilization	inorganic fertilizer, manure, straw mulch		AMF spores, fungal gene sequences	29	0-15	92
China	cropping, fertilization	inorganic fertilization, manure	corn, soy	bacterial gene sequences, enzyme analysis, fungal gene sequences	26	0-20	96

\* Tillage or Residue Management Type is only included for tillage studies. Fertilizer Type is only included for fertilization studies. Non-Wheat Crops is only included for cropping studies.

\*\*Reduced till refers to a reduction in tillage frequency or intensity, including no-till.

\*\*\*Microbial biomass was measured by chloroform-fumigation or substrate-induced respiration.