

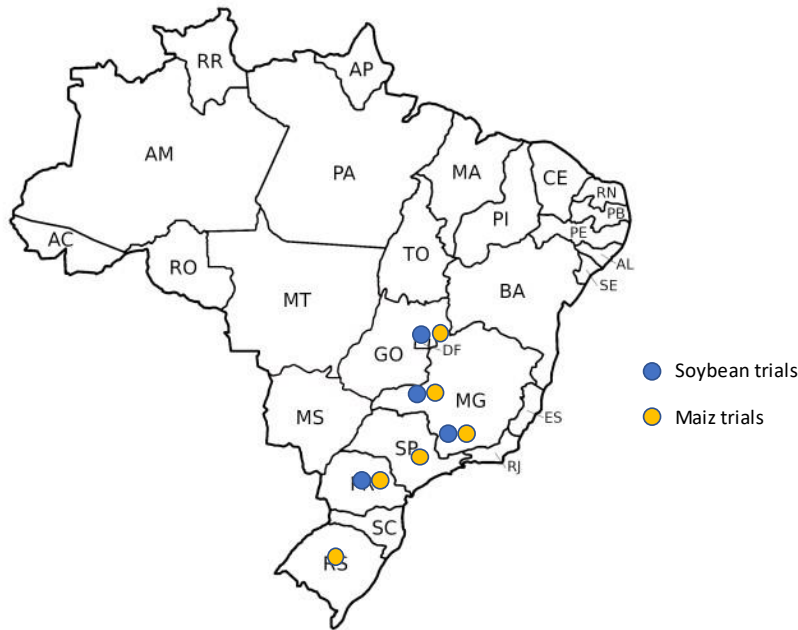
**In-furrow application of arbuscular mycorrhizal fungi propagules enhanced yields, plant vigor, and biomass accumulation of soybeans (*Glycine max*) and maize (*Zea mays*)**

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**Supplementary Table S1.** Geographic coordinates, Köppen climate classification, elevation, annual cumulative rainfall, soil texture, and soil P levels across four soybeans and six maize field trials

Soybeans						
Trial ID City/State	Geographic coordinates	Köppen <sup>1</sup>	Elevation (m)	Rainfall <sup>2</sup> (mm)	Soil texture	P levels <sup>3</sup>
1. Ponta Grossa/PR	S 25°09'52.67" W 50°11'24.19"	Cfb <sup>4</sup>	786	1495	Loam	68.6
2. Uberlândia /MG	S 18°99'65.97" W 48°18'89.92"	Aw <sup>5</sup>	842	1479	Clay	3.2
3. Lavras/MG	S 21°12'51,9" W 45°03'25,1"	Cwa <sup>6</sup>	908	1486	Clay	19.6
4. Planaltina/DF	S 15°40'00,01" W 47°20'10,20"	Aw	916	1433	Clay	20.3
Maize						
Trial ID City/State	Geographic coordinates	Köppen	Elevation (m)	Rainfall (mm)	Soil texture	P levels
1. Itaara/RS	S 29°35'14.7" W 53°49'45.8"	Cfa	425	1723	Loam	11.3
2. Ponta Grossa/PR	S 25°10'05.79" W 50°11'17.82"	Cfb	786	1495	Loam	68.6
3. Iperó/SP	S 23°24'56" W 47°34'68"	Cfa	570	1177	Clay	14.0
4. Uberlândia/MG	S 18°99'65,51" W 48°18'92,74"	Aw	863	1479	Clay	3.2
5. Lavras/MG	S 21°12'54,3" W 45°03'19,8"	Cwa	908	1486	Clay	8.2
6. Planaltina/DF	S 15°40'01,7" W 47°20'10,1"	Aw	916	1433	Clay	20.3

<sup>1</sup>Köppen climate classification system; <sup>2</sup>Average annual rainfall; <sup>3</sup>Mehlich 3 soil test results, expressed in mg dm<sup>-3</sup>; <sup>4</sup>Cfb: temperate oceanic climate; <sup>5</sup>Aw: tropical Savanna, wet climate with dry winter; <sup>6</sup>Cwa: monsoon-influenced humid subtropical climate.



**Supplementary Figure S1.** Schematic map showing the position of experiments in the country.

**Supplementary Table S2.** ANOVA results depicting effects of the independent variables (location, treatment, block, and the *treatment x location* interaction) on the dependent variables plant height and vigor, soybean yields, dry aboveground biomass (DAB), and thousand grain weight (TGW). Data were gathered from four soybean field trials conducted in the 2018/2019 growing season in Brazil.

Type of variable		DF <sup>1</sup>	F-value	p-value
Dependent	Independent			
Plant Height <sup>2</sup>	Location	3	2665.15	< 0.001**
	Treatment	5	2393.00	0.016**
	Block	5	0.78	0.566
	<i>Location x Treatment</i>	15	1356.00	0.098*
Plant Vigor <sup>3</sup>	Location	3	19.40	<0.001**
	Treatment	5	14.31	<0.001**
	Block	5	1.20	0.316
	<i>Location x Treatment</i>	15	3.41	< 0.001**
DAB <sup>4</sup>	Location	3	102.93	< 0.001**
	Treatment	5	2.27	0.053*
	Block	5	1.32	0.262
	<i>Location x Treatment</i>	15	1.42	0.152
Soybean Yields	Location	3	686.64	< 0.001**
	Treatment	5	3.31	0.008**
	Block	5	1.11	0.360
	<i>Location x Treatment</i>	15	2.04	0.019**
TGW <sup>5</sup>	Location	3	1207.89	< 0.001**
	Treatment	5	1.34	0.252
	Block	5	2,5	0.065*
	<i>Location x Treatment</i>	15	1.63	0.790

<sup>1</sup>Degrees of freedom; <sup>2</sup>Plant height data were collected at early flowering stages (R1 soybean growth stage); <sup>3</sup>Plant vigor data were collected at the R3 growth stage (beginning pod); <sup>4</sup>DAB stands for dry aboveground biomass, which was measured at the R5.1 growth stage (early seed development); <sup>5</sup>Thousand grain weight (TGW). \* = p values significant at 10%, according to Fisher's LSD. \*\* = p values significant at 5%, according to Fisher's LSD.

**Supplementary Table S3.** ANOVA results depicting effects of the independent variables (location, treatment, block, and the *treatment x location* interaction) on the dependent variables plant height and vigor, maize yields, dry aboveground biomass (DAB), and thousand grain weight (TGW). Data were gathered from six maize field trials conducted in the 2018/2019 growing season in Brazil

Dependent	Type of variable		DF <sup>1</sup>	F-value	p-value
	Independent				
Plant Height <sup>2</sup>	Location		4	482.08	< 0.001
	Treatment		5	3.13	0.010
	Block		5	0.31	0.904
	<i>Location x Treatment</i>		20	1.25	0.221
Plant Vigor <sup>3</sup>	Location		5	14.35	<0.001
	Treatment		5	9.00	< 0.001
	Block		5	2.80	0.019
	<i>Location x Treatment</i>		25	1.64	0.036
DAB <sup>4</sup>	Location		5	630.97	<0.001
	Treatment		5	0.92	0.465
	Block		5	2.24	0.053
	<i>Location x Treatment</i>		25	2.46	<0.001
Maize Yields	Location		4	1579.05	<0.001
	Treatment		5	3.43	0.006
	Block		5	0.23	0.944
	<i>Location x Treatment</i>		20	1.10	0.353
TGW <sup>5</sup>	Location		5	768.98	<0.001
	Treatment		5	2.47	0.034
	Block		5	1.92	0.092
	<i>Location x Treatment</i>		25	0.99	0.482

<sup>1</sup>Degrees of freedom; <sup>2</sup>Plant height data were collected at early flowering stages (R1 maize growth stage); <sup>3</sup>Plant vigor data, also collected at the R1 growth stage; <sup>4</sup>DAB stands for dry aboveground biomass, which was measured at the R3 growth stage (kernel milk stage); <sup>5</sup>Thousand grain weight (TGW).