

Agroforestry boosts soil-mediated ecosystem services in the humid and sub-humid tropics: a meta-analysis

Article

Supplemental Material

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Table 1. Research questions, associated hypotheses tested and level of confidence provided

Questions and hypotheses	Evidence (confidence)	Illustration
Q1. Does agroforestry reduce soil erosion?		
<i>H1a Agroforestry contributes to lower soil erosion rates than agriculture without trees.</i>	Supported (high)	Figure 2a & 3a
<i>H1b Simultaneous agroforestry practices contribute to greater soil erosion control than sequential practices.</i>	Supported (high)	Figure 2
<i>H1c Agroforestry practices including N-fixing trees contribute to lower soil erosion rates than non-N-fixers</i>	Supported (high)	Figure 3b
<i>H1d Soil erosion reduction under agroforestry practices is greater in sandy soils</i>	Not enough data	
Q2. Does agroforestry build soil organic C stocks?		
<i>H2a Agroforestry contributes to greater soil carbon build up than agriculture without trees.</i>	Supported (high)	Figure 4b
<i>H2b Simultaneous agroforestry practices contribute to greater soil carbon build up than sequential practices.</i>	Supported (high)	Figure 4b
<i>H2c Agroforestry practices including N-fixing trees contribute to greater SOC build up than non-N-fixers</i>	Supported (high)	Figure 4b
<i>H2d SOC build up under agroforestry practices is greater in sandy soils</i>	Supported (high)	Figure 4b
Q3. Does agroforestry build soil organic N stocks?		
<i>H3a Agroforestry contributes to greater soil N build up than agriculture without trees.</i>	Supported (high)	Figure 5b
<i>H3b Simultaneous agroforestry practices contribute to greater soil N build up than sequential practices.</i>	Not supported	Figure 5b
<i>H3c Agroforestry practices including N-fixing trees contribute to greater soil N build up than non-N-fixers</i>	Supported (high)	Figure 5b
<i>H3d Soil organic N build up under agroforestry practices is greater in sandy soils</i>	Supported (high)	Figure 5b
Q4. Does agroforestry increase soil N availability?		
<i>H4a Agroforestry contributes to greater soil N availability than agriculture without trees.</i>	Supported (High)	Figure 6b
<i>H4b Simultaneous agroforestry practices contribute to greater soil N availability than sequential practices</i>	Not supported	Figure 6b
<i>H4c Agroforestry practices including N-fixing trees contribute to greater soil N availability than non-N-fixers</i>	Not supported	Figure 6b
<i>H4d Soil N availability under agroforestry practices is greater in sandy soils</i>	Not supported	Figure 6b
Q5. Does agroforestry increase soil P availability?		
<i>H5a Agroforestry contributes to greater soil P availability than agriculture without trees.</i>	Supported (Low)	Figure 7b
<i>H5b Sequential agroforestry practices contribute to greater soil P availability than simultaneous practices</i>	Supported (Low)	Figure 7b
<i>H5d Soil P availability under agroforestry practices is greater in sandy soils</i>	Not supported	Figure 7b
Q5. Does agroforestry alleviate soil acidity?		
<i>H6a Agroforestry contributes to greater reductions in soil acidity than agriculture without trees.</i>	Supported (Low)	Figure 8b
<i>H6b Simultaneous agroforestry practices contribute to greater increases in soil pH than sequential practices.</i>	Supported (Low)	Figure 8b
<i>H6c Agroforestry practices including N-fixing trees contribute to increases in soil pH than non-N-fixers</i>	Not supported	Figure 8b
<i>H6d Soil acidity reduction under agroforestry practices is greater in sandy soils</i>	Not supported	Figure 89b