Supplementary Data

Effects of legume type, planting pattern and time of establishment on growth and yield of sweet sorghum-legume intercropping

Muhammad Arshad and S.L. Ranamukhaarachchi

Supplementary Table 1. Comparison of plant height, LAI, and grain yield in sweet sorghum between sole and intercropping with mung bean and soybeans in dry 2009/10 and wet 2010 seasons, using Orthogonal Contrasts

Season/ Parameter	Sole cropping	Sweet sorghum-mung bean intercropping		Sweet sorghum-soybean intercropping		MS for error	CV, %
	Variable	MS for contrast[1]	Variable	MS for contrast	Variable		
Dry season							
Plant height, m	2.3±0.1	0.8***[2]	1.9±0.1	0.01	2.2±0.1	0.01	2.4
LAI	6.2±0.4	1.1***	5.4±0.3	0.2	6.0±0.4	0.01	3.5
Grain yield, t ha^{-1}	5.4±0.3	0.3***	5.1±0.4	0.01	5.4±0.4	0.01	1.4
Wet season							
Plant height, m	1.9±0.2	0.5***	1.5±0.2	0.02	1.8±0.1	0.01	5.1
LAI	5.6±0.4	1.1***	4.9±0.3	0.18	5.3±0.3	0.12	6.6
Grain yield, t ha^{-1}	5.4±0.7	4.5***	4.1±0.5	0.50	5.0±0.6	0.17	9.0

1/ MS contrast refers to the mean square of the contrast for comparison between sole crop and intercropping;
2/ *, ** and *** indicate the level of significance at p=0.05, 0.01 and 0.001, respectively.

Supplementary Table 2. Comparison of plant height, LAI, and seed yield in mung bean and soybean between sole cropping and in intercropping using Orthogonal Contrasts and mean squares in dry 2009/10 and wet 2010 seasons

Crop/ Season	MS for contrast[1]	Variable		MS for error	CV, %
		Sole cropping	Intercropping		
Mung bean					
Dry season					
Plant height, m	0.1826	0.9±0.4	0.6±0.3	0.074	40.9
LAI	3.845*[2]	4.1±1.4	2.8±1.2	0.714	27.7
Seed yield, t h^{-1}	1.7*	1.8±1.0	0.9±0.4	0.400	55.1
Wet season					
Plant height, m	0.012***	0.6±0.03	0.3±0.08	0.004	18.6
LAI	1.261***	2.9±0.23	1.9±0.31	0.084	13.4
Seed yield, t ha^{-1}	0.113***	1.5±0.22	1.2±0.09	0.009	7.8
Soybean					
Dry season					
Plant height, m	0.2356	1.1±0.4	0.8±0.5	0.1442	45.8
LAI	3.978*	3.8±1.5	2.5±1.4	0.714	30.8
Seed yield, t h^{-1}	0.4*	1.7±0.4	1.2±0.4	0.10	18.2
Wet season					
Plant height, m	0.049	1.1±0.03	0.9±0.06	0.002	5.4
LAI	2.064	2.7±0.95	1.4±0.68	0.577	43.5
Seed yield, t ha^{-1}	0.071*	1.3±0.20	1.1±0.16	0.014	10.6

1/ MS contrast refers to the mean square of the contrast for comparison between sole crop and intercropping;
2/* and ***- indicate the significance of the comparison between sole and intercropping at p=0.05 and 0.001, respectively.

Supplementary Table 3. Comparison of carbohydrate, protein, fat and energy production in sweet sorghum – legume intercropping patterns with that of sole cropped sweet sorghum during dry 2009/10 and wet 2010 seasons using Orthogonal Contrasts

Season and Food ingredient	Sole crop output	Intercropping with mung bean		Intercropping with soybean		MS for Error	CV, %
		MS for contrast[1]	Intercropping output	MS for Contrast	Intercropping output		
Dry season							
Carbohydrate, t ha^{-1}	3.8±0.20	0.284*[2]	4.2±0.40	0.279*	4.2±0.30	0.063	6.0
Protein, t ha^{-1}	0.6±0.03	0.087**	0.8±0.10	0.481***	1.0±0.10	0.013	13.3
Fat, t ha^{-1}	0.2±0.01	0.001	0.2±0.01	0.141***	0.4±0.10	0.002	17.1
Energy, MJ ha^{-1}	80.7±4.50	188.290*	89.5±7.90	1164.590***	102.7±7.40	42.867	6.9
Wet season							
Carbohydrate, t ha^{-1}	3.8±0.51	0.083	3.7±0.40	0.001	3.85±0.49	0.091	8.04
Protein, t ha^{-1}	0.5±0.06	0.081***	0.7±0.07	0.361***	0.92±0.13	0.003	6.96
Fat, t ha^{-1}	0.2±0.06	0.002	0.1±0.02	0.106***	0.38±0.05	0.001	14.94
Energy, MJ ha^{-1}	80.0±10.66	6.666	78.4±8.53	468.162***	94.00±12.26	45.10	7.85

[1] MS contrast refers to the mean square of the contrast for comparison between sole crop and intercropping;

[2] *, ** and ***- indicate the significance of the comparison between sole and intercropping at p=0.05, 0.01 and 0.001, respectively.