Cotton, bean, and soybean yield and nutrient redistribution in leaf sap in response to organic molecules complexed fertilizers

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Supplementary Table 1. Equations of percentage of nutrients in relation to the controlas a function of days after germination and unit of area under the curve of micronutrients B, Cu, Mn, and Zn complexed with organic molecules and salt and/or chelated fertilizers that arrived in the lower part of the plants of soybean, common bean and cotton.

	Equations (Nutrient concentration percentage curve)	** Unit of area under the curve	
Boron			% in relation to treat 4
Soybean	Treat 4 (B complexed with organic molecule)- 63.9 g B ha^{-1} *$Y=64.2-0.8X-0.004X^2$ $R^2=0.99$ (P<0.02)	368.0	0
	Treat 2 (B - boric acid)- 181.9 g B ha^{-1} $Y=21.9+1.9X-0.02X2$ $R2=0.99$ (P<0.002)	284.6	-23
	Treat 3 (B - boric acid)- 63.9 g B ha^{-1} $Y=12.1$ (NS)	230.8	-37
Common bean	Treat 4 (B complexed with organic molecule)- 63.9 g B ha^{-1} $Y=112-1.5 X$ $R2=0.68$ (P<0.01)	1150.0	0
	Treat 2 (B - boric acid)- 181.9 g B ha^{-1} $Y=9.12$ (NS)	291.1	-75
	Treat 3 (B - boric acid)- 63.9 g B ha^{-1} $Y=7.12$ (NS)	224.1	-81
Cotton	Treat 4 (B complexed with organic molecule)-181.9 g B ha^{-1} $Y= 98.9-1.02X$ $R^2=0.83$ (P<0.0003)	1478.8	0
	Treat 2 (B - boric acid)- 401.9 g B ha^{-1} $Y=46.0-0.52X$ $R^2=0.93$ (P<0.008)	898.3	-39
	Treat 3 (B - boric acid)- 181.9 g B ha^{-1} $Y= 68.7-0.79X$ $R^2= 0.94$ (p<0.005)	616.2	-58
Copper			% in relation to treat 4
Soybean	Treat 4 (Cu complexed with organic molecule)-186 g Cu ha^{-1} $Y=-368+20.8X-0.21X^2$ R^2 0.84 (P<0.05)	4146.3	0
	Treat 2 (Cu- Hydroxic Copper)- 786 g Cu ha^{-1} $Y=-241+12.8X-0.12X^2$ R^2 0.99 (P<0.04)	2820.9	-32
	Treat 3 (Cu- Hydroxic Copper)- 186 g Cu ha^{-1}	2145.9	-48

	Y=-227+12.1X-0.12X^2 R^2 0.97 (P<0.02)		
Common bean	Treat 4 (Cu complexed with organic molecule)-186 g Cu ha^{-1} Y=-300+15.0X-0.15X^2 R^2=0.51 (P<0.01)	21514.9	*0*
	Treat 2 (Cu- Hydroxic Copper)- 786 g Cu ha^{-1} Y=-259+12.8X-0.13X^2 R^2=0.52 (P<0.02)	18380.4	*-14*
	Treat 3 (Cu- Hydroxic Copper)- 186 g Cu ha^{-1} Y=-22.1+0.7X R^2=0.94 (P<0.007)	1885.0	*-91*
Cotton	Treat 4 (Cu complexed with organic molecule)-300 g Cu ha^{-1} Y= -307+14.2X-0.11X^2 R^2=0.54 (P<0.01)	3115.3	*0*
	Treat 2 (Cu- Hydroxic Copper)- 786 g Cu ha^{-1} Y=-224+9.2X-0.07X^2 R^2=0.78 (P<0.01)	1425.1	*-54*
	Treat 3 (Cu- Hydroxic Copper)- 300 g Cu ha^{-1} Y= -195+8.4X-0.06X^2 R^2=0.88 (P<0.07)	1808.6	*-42*
Manganese			% in relation to treat 4
Soybean	Treat 4 (Mn complexed with organic molecule) - 65 g Mn ha^{-1} Y=116-1.5X R^2=0.48 (P<0.04)	1252.9	*0*
	Treat 2 (Mn - chelated) - 130 g Mn ha^{-1} Y= 9.2 (NS)	284.9	*-77*
	Treat 3 (Mn- chelated) - 65 g Mn ha^{-1} Y=62-1.0X R^2=0.80 (P<0.02)	356.5	*-72*
Common bean	Treat 4 (Mn complexed with organic molecule) - 65 g Mn ha^{-1} Y=142-2.1X R^2=0.83 (P<0.01)	947.1	*0*
	Treat 2 (Mn- chelated) - 130 g Mn ha^{-1} Y=14.7 (NS)	318.4	*-66*
	Treat 3- (Mn- chelated) - 65 g Mn ha^{-1} Y=12.2 (NS)	386.1	*-59*
Cotton	Treat 4 (Mn complexed with organic molecule) - 65 g Mn ha^{-1} Y=110-1.17X R^2= 0.64 (P<0.003)	1621.7	*0*
	Treat 2 (Mn- chelated) - 130 g Mn ha^{-1} Y=-96.6+3.7X-0.032X^2 R^2 = 0.86 (P<0.04)	36.3	*-98*
	Treat 3 (Mn- chelated) - 65 g Mn ha^{-1} Y= 1.12 (NS)	198.7	*-88*
Zinc			% in relation to treat 4
Soybean	Treat 4 (Zn complexed with organic molecule) - 65 g Zn ha^{-1} Y=-127+7.7X-0.008 X^2 R^2 = 0.90 (P<0.90)	8442.6	*0*
	Treat 2 (Zn- chelated)- 130 g Zn ha^{-1} Y=9.2 (NS)	1123.2	*-87*
	Treat 3 (Zn- chelated)- 65 g Zn ha^{-1} Y=-195+10.3X-0.11X^2 R^2 = 0.99 (P<0.02)	295.7	*-96*
Common bean	Treat 4 (Zn complexed with organic molecule)-65 g Zn ha^{-1} Y=-16.5+3.1X-0.04X^2 R^2=0.44 (P<0.02)	2140.5	*0*
	Treat 2 (Zn- chelated)- 130 g Zn ha^{-1}	293.2	*-86*

	Y= 7.12 (NS)		
	Treat 3 (Zn- chelated) - 65 g Zn ha^{-1} Y= 9.12 (NS)	226.5	*-89*
Cotton	Treat 4 (Zn complexed with organic molecule) - 65 g Zn ha^{-1} Y= $-118+7.04X-0.065X^2$ R^2 = 0.79 (P<0.04)	2102.9	*0*
	Treat 2(Zn- chelated) - 130 g Zn ha^{-1} Y=32.1 (NS)	1365.1	*-35*
	Treat 3 (Zn- chelated)- 65 g Zn ha^{-1} Y=$-134+6.1X-0.05X^2$ R^2=0.84 (P<0.005)	1015.8	*-52*

Treat – Treatment; *Curve representing the percentage of nutrient concentration in the sap on the underside of the plants in relation to the control treatment as a function of days after germination;
** Integral of the nutrient concentration percentage curves - represents the amount of nutrients in the sap at the bottom of the plants.