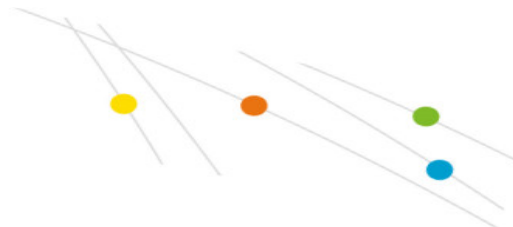




Three potassium nitrate sprays increased yield, fruit quality and income of litchi

This study was conducted to test the efficacy of potassium nitrate foliar application on quality attributes and yield of litchi (*Litchi chinensis* Sonn.) cv. Rose Scented in Pantnagar, India. Foliar KNO_3 spray(s) at 1% concentration were applied on 14 year old fruit bearing litchi plants. Treatments consisted of an unsprayed control, a single spray at 15 or 30 or 45 days after fruit setting, two sprays at 15 and 30 days, 15 and 45 days or 30 and 45 days after fruit setting and 3 sprays at 15, 30 and 45 days after fruit setting as a final treatment. The experiment was laid out in a randomized block design with 8 treatments and 3 replications per treatment. Total soluble solids increased with 3 foliar sprays to 18.0%. compared to 16.5% for the control (Table 1). Three KNO_3 sprays also resulted in less fruit cracking (up to 40% reduction over control) and maximum accumulation of edible portion (65%) in the fruits weighing 18.3 g. The maximum yield was obtained with 3 sprays and was statistically significantly higher (+21%) compared to the control (Table 2). This yield increase was caused by reduced fruit drop of 11% and increased fruit weight of 14%. The bigger sized fruits have a higher market price, which resulted in a higher net income for two and three KNO_3 spray applications compared to the control and one spray applications, which resulted in smaller sized fruits.

Table 1. Effect of foliar potassium nitrate applications at 1% concentration on quality



attributes of litchi:

Treatment	Foliar timing (days) ¹			TSS	Fruit cracking	Fruit drop	Fruit weight
	15	30	45	%	%	%	g
T1 (control)				16,5	12,1	90,8	16,0
T2	x			16,8	10,6	89,2	17,3
T3		x		16,3	9,9	86,2	17,5
T4			x	17,0	8,0	84,4	17,5
T5	x	x		17,6	8,0	83,6	17,5
T6	x		x	17,6	7,5	82,6	17,8
T7		x	x	18,1	7,4	81,1	18,1
T8	x	x	x	18,0	7,2	81,3	18,3
CD at 5%				0,9	4,2	4,9	1,9
CV				3,9	10,3	7,1	6,2

¹ days after fruit set

Table 2. Effect of foliar potassium nitrate applications at 1% concentration on yield and profit of litchi:

Treatment	Foliar timing (days) ¹			Fruit yield/tree	Profit over control ²
	15	30	45	kg	Rs./ha
T1 (control)				23,1	-
T2	x			24,0	35.600
T3		x		24,7	36.695
T4			x	24,5	36.320
T5	x	x		27,0	53.260
T6	x		x	27,1	53.460
T7		x	x	27,7	54.520
T8	x	x	x	27,0	54.800
CD at 5%				2,0	
CV				8,3	

¹ days after fruit set. ² after deducting fertilizer product cost