

## Coffee - Ruiri, Kenya, 2010

### INTRODUCTION

Vitazyme + TwinN has been used on Muthaite Estate for three years. The Estate uses a mixture of conventional nitrogen fertilizer applications and a system of applications of TwinN to provide nitrogen nutrition to the coffee crop. Vitazyme was added to boost the effect of the TwinN that alone was not able to supply adequate N. This system is used to reduce fertilizer costs, increase yields, increase tree health and increase soil quality.

### KEY RESULTS

- Vitazyme+TwinN increased yields by >50 % compared to the conventional fertilizer program (with some varietal differences indicating up to 180% increase)
- Vitazyme+TwinN greatly reduced the cost of production
- Vitazyme+TwinN improved the percentage of AA grade beans (higher payment premium)
- Workers reported dark green leaves, uniform flowering and full bearing at fruiting in Vitazyme plots compared to the conventional plots

**Table 1. Costs and yields from 4 nutrition programs (\* coffee type R11 is resistant to CBD).**

Block No	Fertilizer applied	Quantity of fertilizer	Unit price(ksh)	Ha applied	Total Cost (ksh)	Total Tons picked	Tons/ha	Cost/Ton(ksh)
B2(A)	CAN	33 bags	1603	3.89	52,899 (USD640)	3.29	0.85	16,079 (USD195)
B2(B)	NPK(22:6:12)	38 bags	2567	3.57	97,546 (USD1180)	3.85	1.08	25,337 (USD306)
G2 *SL	3 applications TwinN. Vitazyme.	3X1ha vial 3 X 1Lt	3400 1800	1.2	15,600 (USD180)	1.82	1.52	8,159 (USD99)
G2 *R11	1 application: TwinN Vitazyme	1X 1 ha vial 1X 1Lt	3400 1800	0.5	5,200 (USD60)	1.2	2.4	4,125 (USD50)

**Table 2. Grades of coffee beans from TwinN+Vitazyme and chemical fertilizer plots.**

GRADE	AA %	AB %
B2(A)	12	48
B2(B)	16	51
<b>TwinN +Vitazyme (average)</b>	20	44

### NUTRITION PROGRAM

**B2(A)&B2(B)** Rock phosphate plus CAN or NPK 22.5.12 top dress applied in three splits: before flowering, at flowering and at fruit expansion.

**TwinN + Vitazyme** Rock phosphate plus TwinN plus Vitazyme. In G2 SL TwinN and Vitazyme were applied before flowering, at flowering and at fruit expansion. In G2 R11 they were applied before flowering. Applications were made by backpack.

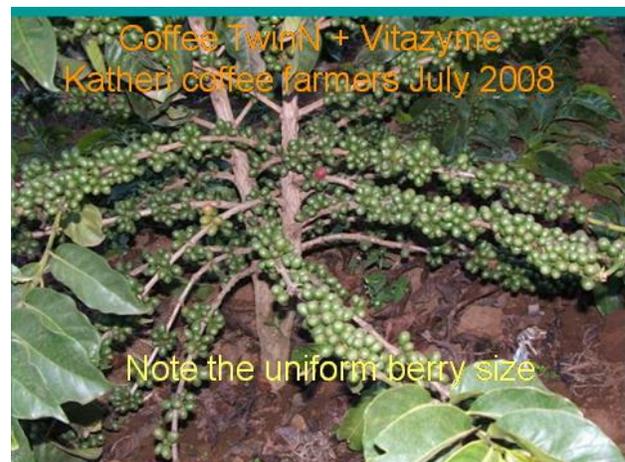
These nutrition programs have been used for three consecutive years and the farmer comments that he can no longer afford to NOT use the Lachlan program due to cost saving, yield increase and improvement in quality. Vitazyme is now being applied with all foliar fertilizers, with the estate no looking at complimenting the Rock Phosphate application with 4 timed foliar sprays of a soluble P (Amcopaste 20:50:10) per year.

### CONCLUSION

The TwinN plus Vitazyme blocks produced higher yields of higher grade coffee at lower cost. Decreased nitrogen fertilizer applications could increase soil quality and health over time.



**Control: NPK 22-5-12 at 50 kg/500 trees, in 3 splits**



**Vitazyme 3 X 1Lt + TwinN 3 X 1ha vial**