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Newsletter

WEATHER AND TEA YIELDS

By J. K. Bore

The weather during the year was varied (Table 2). The year started with a potential soil water deficit of 128.2 mm and the rainfall in January was about 25% of the long-term mean. However, from March onwards, the rainfall received was normal compared to the long-term mean. These environmental conditions were favourable for tea production, but due to the post election violence during that period, tea plucking was affected as evidenced by the yield decline (Table 1). There was a high decline in yield of 47.56%. Only six months had a positive yield increase with December recording the highest of (31.53%) and the other months were marginally lower than 10%. The overall effect of this was a mean of 6.5% decline in yield.

There were a total of 26 hail incidences reported from tea growing areas west of the Rift Valley. 3231.3ha of tea was hit resulting in 157,236Kg green leaf loss. The peak incidences occurred during the month of June and accounted for 16.52% of total green leaf loss. Generally, there was hail through out the year except in January, April and December. The hail incidences seem to be on the increase and this contributed to reduction in the 2008 yields.

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Technical Note

MRTM1 – A HIGH YIELDING AND DROUGHT TOLERANT TEA CLONE FROM UNILEVER TEA KENYA.

Gabriel K. Tuwei [1]

ABSTRACT

MRTM1 is a new tea variety developed by Unilever Tea (K) limited. In field experiments, recorded for at least four years at 3 different altitudes, it yielded more than standard clones AHP S15/10 and TRFK 31/8 by an average of 14 and 21 % respectively. Its black tea quality, when compared with quality standards clones GW Ejulu, TRFK 6/8 and BBK 35, was found to be acceptable but not exceptional. When tested as a rootstock it performed better than EPK TN14/3, which is widely used commercially as a rootstock. Yield of the scions TRFK 31/8 and AHP S15/10 was improved by over 20 % when grafted on MRTM1. MRTM1 is more tolerant to drought than four other tea clones widely planted commercially.

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NPK(S) FERTILIZER USE IN COMMERCIALLY CULTIVATED CLONE BBK 35 IN DIFFERENT TEA GROWING REGIONS OF KENYA: II. EFFECTS OF NITROGEN RATES AND PLUCKING INTERVALS ON SOIL CHEMICAL PROPERTIES

D.M. Kamau, J.K. Wanyoko, P.O. Owuor, W.K. Ng'etich

ABSTRACT

One commercially and widely grown tea cultivar, clone BBK 35 was evaluated for changes in soil chemical properties at different N-fertilizer rates and plucking rounds in five different localities in Kenya. The soils in all the tea areas were strongly acidic with two of the sites at the higher altitude (>2,180 m asl) experiencing cool wet seasons (Karirana and Timbilil) while the other three lower altitude sites (<1,860 masl) having warm-wet seasons (Changoi, Sotik Highlands and Magura-Kipkebe). While a previous paper in this series gives the experimental design and initial soil chemical properties in 1997, the effects of the N-rates (0, 75, 150, 225 and 300 kgN/ha/year) and plucking intervals (7, 14 and 21 days) on some soil chemical parameters down the profile after seven years of annual treatment application in 2004 are discussed herein.

Plucking intervals did not have significant effects on the measured soil parameters (pH, extractable Mn, K, Mg, Ca, and P). N-rates caused acidification especially for rates above 150 kgN/ha/year, which was corroborated by the soil extractable Mn. Similarly, there was evidence of leaching of base nutrients, especially extractable Ca and Mg, down the soil profile. The results demonstrate need for prudent use of N-fertilizers at the rates of 150 kgN/ha/year and below, to avoid nutrient imbalances in tea fields.

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TECHNOLOGICAL AND SOCIO-ECONOMIC FACTORS AFFECTING TEA PRODUCTIVITY AMONG SMALLHOLDERS IN IMENTI AND KAPKOROS

Francis Mwaura, Ogise Muku, D. Marangu, E. Towett and D. Otieno

ABSTRACT

Innovation, transfer and adoption of elite technologies are sole strategies in addressing improved production and income among farmers. However, researchers have continued to produce innovative technologies that have been proven to increase farm productivity, although levels of adoption among the smallholder tea growers have largely remained unchanged. Failure to adopt elite technologies among smallholders has resulted in persistently low production levels compared to the large estate sub-sector. Economic studies have shown that factors influencing adoption of technologies among farmers include: characteristics or attributes of technology, adopters' socio-economics characteristics and perception of the technologies attributes. Efficiency in research, information dissemination and policy interventions will be achieved if the socio-economics, technological and production regimes of clients are well understood. This paper presents findings of technological and socio-economic factors that affect yields per unit area among smallholders in Imenti and Kapkoros in Meru Central and Bomet districts respectively. In both catchments rate of fertilizer use (kg N ha^{-1}) and number of tea varieties propagated were significant ($P \leq 0.05$) in

her factors also influenced productivity in the two catchments though not significantly.

licy, research and extension interventions will improve productivity.

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UNDERSTANDING SMALLHOLDER TEA FARMERS: CLOSING THE LOOP BETWEEN EXPECTATIONS AND REALITIES

By D.M. Kamau

ABSTRACT

The gap between the average yields per hectare attained by small scale tea farmers and the large scale estates in Kenya is big. This is despite the fact that the former sector comprises of over 80% clonal teas that are often high yielding compared to the latter that has about 70% low yielding seedling teas. Although the tea plant can remain in production for upto 100 years the peak of economic production is reached between 30 and 50 years, and productivity lowers thereafter due to ageing. The smallholder sector is slowly getting to the ageing phase and there is need for researchers and extensionists to try and understand why these smallholder tea farmers are slow in adopting the already available technologies if the gap is to be narrowed without necessarily compromising on the quality (two and a bud). This article suggests ways of tackling farmers' problems, thus closing the loop between their expectations and realities.

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THRESHOLD SOIL WATER CONTENT FOR GROWTH OF TEA [*Camellia sinensis* (L.) O. Kuntze]

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ABSTRACT

The limiting soil water content (SWC) for tea (*Camellia sinensis* L.) production was determined at Tea Research Foundation of Kenya. Tea producers continue to incur huge losses due to drought and hence the need to establish the threshold SWC for tea and to pave way for mitigating measures. The study consisted of six tea clones (BBK 35, TRFK 6/8, TRFK 76/1, TRFK 395/2, TRFK 31/30 and TRFK 311/287) and four levels of SWC (38, 30, 22, and 14% v/v), which were arranged in a completely randomized design and replicated three times. Tea response to the treatments was observed for 12 weeks. Leaf and shoot growth were measured weekly for four and eight weeks, respectively, while dry matter yield and partitioning were determined in the 12th week. Other measurements included leaf relative water content (RWC), CO_2 assimilation, stomata conductance and transpiration. Shoot growth had a break-point at 28% v/v SWC, while that of leaf expansion and RWC was observed at 20-18% v/v SWC. The results suggests that SWC below 28% v/v, which was equivalent to ≥33% soil water deficit (SWD), significantly lowers tea yields while SWD above ≥ 52% risk survival of tea plants. It emerged that 20% SWC is the critical limit for tea. Data may be useful in irrigation management for irrigated tea and as a benchmark for clonal selection when drought tolerant clones are targeted.