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Newsletter

WEATHER AND TEA YIELDS

By
B.C. Cheserek

The weather during the period January to December, 2009 was varied and quite different in pattern from the previous years (Table 3). As compared to the previous year, potential soil water deficit developed in January and February was lower than for the same period last year. This was due to *El-nino* rains received in the month of December which is usually dry. Overall, growing conditions were a bit stressful throughout the year because of the prolonged drought. Tea yields were generally lower in the east of Rift with a negative variance of more than 20% in all Districts except for Meru Central (17.54%). Trans-Nzoia District had the highest variance increase (29.06%) during the year. There was a general decrease in yield of 9.14 compared to the same period last year (Table 1). There were a number of hail incidences reported from tea growing areas West of Rift and these are presented in Table 2. Hail incidences were highest in April, August and September in all areas. Two frost incidences were reported during the period; one from Kericho that hit more than 32 ha with a loss of about 5,760 green leaf (gl) Kgs. while the other one reported from Nandi hit more than 30 ha recording a loss of about gl Kgs.

Technical Note

THE TEA RESEARCH FOUNDATION OF KENYA PRE-RELEASES PURPLE TEA VARIETY FOR PROCESSING HEALTH TEA PRODUCT

By S.M. Kamunya, F.N. Wachira, K. W. Nyabundi, L. Kerio and R.M. Chalo

ABSTRACT

The Tea Research Foundation of Kenya (TRFK) has pre-released a purple tea variety, TRFK 306/1 for commercial utilization targeting a unique tea product - anthocyanin-rich tea. The new variety has comparable yield performance to the standard yield control clone TRFK 31/8. As the variety produces a purple tea product, its quality might not have been appropriately measured against the black tea quality clone TRFK 6/8, but the premium price the product fetches far outweighs the value of the highest black tea quality product. Initial adaptability studies demonstrate its wide adaptability in all tea growing regions. The variety is also highly resistant to the major diseases and pests of tea as to date, none of these have been found attacking the purple tea varieties.

EFFECTS OF WATER STRESS ON GROWTH AND WATER RELATIONS OF YOUNG GRAFTED TEA

By

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ABSTRACT

The effects of soil water stress on some physiological parameters and dry matter partitioning (dm) were studied in grafted tea plants (*Camellia sinensis* L.) grown in containers and subjected to adequate and reduced water contents. Effects of reduced water content and rootstocks on growth, dry matter partitioning of young grafted tea were evaluated. There were significant variations in different attributes among clones and water regimes. Water contents significantly ($P \leq 0.05$) affected root lengths. Clonal variations were also evident with scions clones grafted on rootstocks EPK TN 14-3, TRFK 57/15 and TRFK 303/577 under water stress regimes indicates some tolerance to low water contents. Leaf water potential was lower in water stressed plants than well watered ones. Water stress significantly ($P \leq 0.05$) affected dm partitioning, with more dm being allocated to roots under water stress conditions. Leaf area and stem diameter declined with water stress, while root length density increased. It is concluded that physiological parameters and dry matter allocation are influenced by water stress and rootstocks.

NURSERY PERFORMANCE OF DIFFERENT TEA SHOOT TYPES

By
K.W. Nyabundi

ABSTRACT

An experiment to assess the performance of different tea planting material was conducted at the Tea Research Foundation, Kangaita nursery between 2008 and 2009. The trial consisted of five commercial clones (TRFK 31/8, TRFK 303/577, TRFK 301/4, TRFK 301/5, and TRFCA SFS/150) and four shoot types as treatments (single node cuttings; 1st, 2nd and 3rd leaf shoots; 2nd, 3rd and 4th leaf shoots; and 3rd and 4th leaf shoots). Results showed that survival rate of clone TRFK 31/8 at 8 months after planting was slightly better than all others at 83%. However, single node cuttings of clone TRFK 301/4 had significantly superior survival rate (99%). The clone TRFK 301/4 was also more superior in root and shoot development. Single node cuttings had superior survival rate of 90.4% and better shoot development than multiple leafed shoots. Multiple shoot cuttings however had better root development. The trial demonstrated that all the shoot types tested can be used as nursery planting material as well as the traditionally used single node cuttings. Pluckable shoots can therefore be used as alternative nursery planting material to single node whole leaf cuttings

MECHANICAL HARVESTING OF TEA IN KENYA: A REVIEW AND FUTURE PROSPECTS

By
J.K. Bore

ABSTRACT

The annual cost of plucking tea has greatly increased within the past few years and it has significantly reduced the grower's earnings. In order to lower the cost of plucking, there has been an attempt to use other alternative methods such as shears and machines. Although mechanical tea plucking is faster and cheaper, the quality of the product and its value is low. These problems could be corrected through planting of clones with erect to semi-erect leaf pose angle, raising the plucking height in subsequent plucking rounds and also plucking in the same direction. The impact and implication of mechanization in the industry is great and it seems to be the only option for sustainability of the industry.

**PRELIMINARY STUDIES OF TEA MOSQUITO BUG (*Helopeltis schuotedeni* Reuter)
FEEDING PREFERENCE, ON TEA SHOOTS (*Camellia sinensis* Kuntze) IN KENYA**

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ABSTRACT

Preliminary studies on the tea mosquito bug (*Helopeltis schuotedeni* Reuter) were conducted to determine the most preferred part of the tea shoot by the bug in the greenhouse. The study was done for over three months using five population levels, 1, 2, 3, 4, and 5 pests, as treatments and replicated 8 times in a complete random design. The result showed that there were significant ($P<0.01$) effect to puncture distribution on the shoot. Feeding preference was concentrated on first and second leaves of the shoot than the other parts. The duration did not significantly influence the number of punctures on any part of the shoot. There was also a significant ($P<0.01$) effect to the number of punctures on the internodes of the shoot, and the second internode was significantly ($P<0.05$) higher than other internodes.

CORRELATING IMPACTS OF SOIL EROSION ON TEA YIELDS IN TIMBILIL TEA ESTATE, KERICHO DISTRICT, KENYA USING NORMALIZED DIFFERENCE VEGETATION INDEX

By

B.C. Cheserek, E.C. Kipkorir¹, E.K. Ucakuwun¹ and W.K. Ng'etich¹

ABSTRACT

The most commonly used vegetative index is the Normalized Difference Vegetative Index (NDVI). The relationship between satellite reflectance and leaf area index (LAI) has been used to develop regional maps of LAI, which is successfully predicted from NDVI because the relation between NDVI and LAI is approximately linear. The study aimed at determining the relationship between Normalized Difference Vegetation Index (NDVI) and soil erosion severity in Timbilil Tea Estate, Kericho and correlating NDVI and tea production for January, the year 2000. Satellite imagery data, a soil erosion risk map, computer hardware and software and a Global Positioning System were used. A NDVI map was developed and assessment of the impact of water erosion variability for Timbilil Estate, Kericho on NDVI values was also done. There was a negative relationship between soil erosion risk and NDVI field averages ($P > 0.05$, $n = 20$, $R^2 = 0.02$) with the lowest NDVI average value of 0.270 being recorded in Field 16 which had a soil erosion risk category 2 (between 3 – 5 tonnes/acre/year) and the highest NDVI average value of 0.510 recorded in Field 13 which generally had a very low risk to erosion. There was a weak positive but not significant ($P < 0.05$, $n = 16$, $R^2 = 0.0834$) relationship between NDVI and tea yields. It is concluded that much advantage might be obtained from the estimation of LAI to assess tea production from optical remote sensing data, particularly NDVI.