

**MINUTES OF THE 195TH MEETING OF THE COUNCIL OF MANAGEMENT
HELD ON 29TH JUNE AT KOLKATA**

Present

Mr P K Bezboruah
Ms N Palchoudhuri
Mr Atul Asthana Addl. Vice-Chairman
Mr V Bhasin
Mr J S Chahal
Mr O P Chokhani
Mr S Gurung
Mr B K Dalmia
Mr S Choudhury
Mr V Kumar
Mr A Krishan
Mr B K Nahata
Mr Sudhir Prakash
Mr D Raj
Mr A Raha
Mr S K Saria
Mr S Soundararajan
Mr M K Varma
Dr A K Barooah
Dr A Babu
Mr J Phukan
Mr A Mitra

Chairman
Vice-Chairperson

Director, TRA
Director Designate
Secretary, TRA
Financial Controller, TRA

1. Confirmation of Minutes:

The Minutes of the 194th Meeting of the Council of Management held on 12th April, 2022 was confirmed by the Council of Management.

2. Action Taken Report :

- a) It was informed that the Secretariat have obtained offers for mobile app for Advisory Officers which is awaiting finalisation from the senior members of the Council. The Council advised the Secretariat to advertise the same to get more offers.
- b) The Chairman and Secretariat approached some buyer companies for membership.
- c) The Secretariat completed Bank formalities with new signatories.

3. R & D Report :

The Director apprised the members of the R&D for the first quarter of the financial year. The salient features of the work stated by him are given below :

- a) Long term trial under Development of climate resilient quality and high yielding planting materials, higher yield and photochemical efficiency was continued to be recorded in St. 643 compared to control (TS 520).
- b) Under clonal selection program, out of 3590 plants, 14 plants have been selected from Dufflating tea estate for further evaluation.
- c) About 500 Gama-irradiated seed grown plants have been transferred from Borbhetta to NBA for plantation. After hardening, all marked plants will be propagated.
- d) Collected DUS characterization data from the 19 garden series clones. [Gotonga 20, Cherideopurbat 23, Thowra 2/11, Digulturrung 2/14, Dinjoye 16, Lengree 51, Lengree 56, Dhulapadang 36, Majbat 110, Dhul 41, Narsingpore 4, Tukdah 78, AV2, Sundaram (B/5/63), Koomsong 23, Sanyasithan 8, Sanyasithan 9, Sanyasithan 10, and Sanyasithan 27].
- e) The physiological parameters, viz., (net photosynthesis, water use efficiency, stomatal conductance, carboxylation efficiency, leaf temperature and transpiration were recorded in the experimental site at NBRDC, Nagrakata. Significant increase in net photosynthesis and water use efficiency as well as reduced transpiration rate was recorded in Salicylic acid@1.0 mM, followed by MOP@2% with respect to control.
- f) For establishment of DNA barcodes for wild and commercial tea varieties, Matk, rbcL, psbA-trnH chloroplast gene and ITS2 nuclear gene amplification and Sanger Sequencing in 23 germplasms [TV32, TV30, TV26, TV9, TV22, TV20, TV34, HV39, AV2, Tin Ali17, T78, S3A3, T3E3, WK/K/A, HK22/144, SNT10, S3A1, RR.17/144, Bormaajan, C. irrawadiensis, TV1, TV19, TV35, TV22(repeat), TV35 (repeat)] were carried out.
- g) In a DBT-NER new project on Germplasm characterization, genomics analysis and gene discovery for yield, metabolite and stress tolerance in tea, following work was initiated:
 - Genetic resource survey for mapping potential unutilized Drought tolerant germplasms and sitemap preparation.
 - Germplasm assessment for Diversity panel assemblage primarily focusing on Drought tolerant traits as a prerequisite for Genome-wide Association study.
 - Finalizing agronomically beneficial morphological and biochemical traits related to yield, quality and Drought tolerant traits for preliminary evaluation of unutilized germplasm set.
- h) In another DBT-NER funded project on Establishing Efficient Platform for Genetic Engineering in Indian Tea, for direct somatic embryogenesis, culture of TV1/Betjan immature cotyledons in embryo initiation media has been initiated.

- i) In the DBT-NER funded project on value addition and product diversification in Tea, Human colon HT-29 cells is being maintained in the cell culture lab at Tocklai which was started to consolidate our work on Tea and Health.
- j) In the Tea Tissue culture studies, micropropagation of TTRI1 (TV32), TTRI2 (TV33), TV34, TV35 and S7 tea cultivars are in progress. About 30 plants have been transferred to earthen pots for establishment under shade.
- k) 11. Statistical evaluation of 96 TRA diverse germplasms for drought response [K means and Hierarchical cluster analysis] and retrospective analysis of TV clones for their Drought Response followed by derivation of Multiple Logistic Regression Model based on Morphological and physiochemical traits, for predictive classification of candidate germplasms into drought tolerant and drought susceptible categories.
- l) Selection of promising clones at 10% selection intensity and initiation of cutting raising for propagation as needed for further evaluation.
- m) The work on purification and identification of *Fusarium* sp. Collected from both collected twigs and soil samples of Upper Assam and South Bank Gardens is in progress.
- n) New strains of actinomycetes were isolated from rhizospheric top soil of *Fusarium* infected areas and a laboratory trial is being carried to test their antagonistic potentiality against *Fusarium* sps.
- o) Gut bacteria has been isolated from termites collected from Hathikuli TE and Namburnadi TE. Different strains of bacteria were grown as pure culture in nutrient agar media and preserved for identification and further study. Most of the isolates were found to be gram negative.
- p) 16. Isolation of fungus from fungus comb of termite collected from tea estate of Assam is under progress.
- q) Screening of 2nd phase actinobacterial strains: PTS 94, BT12, ATE -5, ATE-21 and A13 for 24, 48 and 72 hrs against *Helopeltis theivora* (adult stage), *Oligonychus coffeae* (adult stage) and *Hyposidrata laca* (2/ 3rd instar stages) to study the effectiveness after treatment has been done and antifeedant tests performed against *helopeltis* and looper were carried out at Tocklai and in commercial gardens (Lakwah and Dalowjan TEs).
- r) Laboratory and Field evaluation of an MAK ADJUVOL as an adjuvant of recommended pesticides 9. Laboratory bioassay of different concentrations of commercial entomopathogenic nematode (EPN) formulation against *Empoasca flavescens* and *Scirtothrips dorsalis* has been done
- s) The experiments were initiated in Borbhetta and Loosun Tea Estate at Nagrakata, to study the response of IFFCO-Nano Urea in terms of (a) efficacy of IFFCO LIQUID NANO UREA on growth, yield and quality of tea, (b) effective dose and frequency of application and (c) phytotoxicity and related issues.
- t) 20. Other gardens where this trial is replicated are as follows:

- Jorhat – Numaligarh Tea Estate, Borbam Tea Estate and Amgoorie Tea Estate
 - Cachar- Rosekandy Tea Estate and Narsingpore Tea Estate
 - North Bank- Bateli Tea Estate and Hurchura Tea Estate
 - Upper Assam- Sessa Tea Estate
 - Terai- Hunsqua Tea Estate, Ord Terai Tea Estate and Simulbari Tea Estate.
- u) In a DBT-NER funded project on development of sustainable agriculture practices for biotic and abiotic stress management in conventional and organic tea plantations, field evaluation of novel super hydrophobic coated fertilizer and microbial consortium impregnated hydrogels has been initiated for drought management in tea at Tocklai. At NBRDC, re-culturing *Bacillus subtilis*, *Trichoderma* spp., *Bacillus thuringiensis*, *Microbacterium paraoxydans*, *Metarhizium robertsii* s.l. (*M. anisopliae* s.l.) and the protocol for development of bioformulations standardized.
- v) Evaluation of a New herbicide 'OAH56' was completed and the evaluation of another new herbicide Flumioxazim 50% SC, 2nd season trial started.
- w) Evaluation on bio-efficacy of a coded acaricide (BCS-CW64991) against tea red spider mites has been initiated in field.
- x) Compilation of data generated from the field experiments [efficacy of Solomon (Betacyfluthrin 90 G/L + Imidacloprid 210 G/L OD) against looper caterpillars] are in progress.
- y) Completed the *In-silico* tertiary structure prediction and evolutionary analysis of two enzymes involved in the natural phenols biosynthesis pathway (PAL and TAL) from tea crop *Camellia sinensis*. Preparations of manuscript are in progress.
- z) Maintained the culture of *Corcyra cephalonica* and *Sycanus collaris* under laboratory conditions.
- In-house project 'Biochemical investigation of Darjeeling orthodox teas with special emphasis on aroma components', newly processed Darjeeling orthodox tea samples was sent to Dr. B. Kashyap, Analytical dept., TTRI, TRA, Jorhat. The solvent extraction of VFC from orthodox tea will be done and then run in the GC-MS. Subsequently, tasting and biochemical data will also be collected.
 - In a field trial at Banarhat T.E. the effect of Agrisilica (a silicon-based fertilizer) on yield of tea and on its stress tolerance ability is being evaluated.
 - Tea and Health Studies
 - The results showed that the H₂O₂ induced oxidative stress on HT-29 human colon cell revealed that theaflavins showed protection against induced free radicals with crude theaflavin (estimated 60 % purity) showed significant

protection to HT-29 cell compared to TF 1, TF 3 and PRE (Prednisone, a standard steroid used for comparison).

- PCR primers for studying oxidative stress related gene expression were designed using NCBI database. Elongation factor, glutathione peroxidase, nuclear factor kappa-B kinase, nuclear respiratory factor along with housekeeping genes, B-actin and GAPDH were selected for the study. The primers are being standardized using isolated RNA of both VERO and HT-29 cells. B-actin, GAPDH and Elongation factor have shown DNA bands after PCR amplification.
- This study will be helpful in cost effective application of TFs.
- Identified 4 areas of Collaborative Research with Patanjali Research Institute, (PRI) Hardware:
 - Formulation of theaflavin based anti-viral tablets against Hepatitis C virus (HCV).
 - Nanoliposomal delivery of anti-bacterial, anti-oxidant and anti-inflammatory phytochemicals obtained from tea extracts/purified compounds.
 - Experimental validation of the in-silico observations of potential anti-viral effects of tea phytoconstituents against SARS-CoV-2.
 - Development of Tea Fortified with Ayurveda.

Samples of theaflavin fractions freshly extracted, purified to different levels and estimated at Tocklai were sent to Patanjali Research Institute for initiating the proposed work in June 2022.

The Director addressed the points raised by the President, TAI. Regarding Fusarium disease he mentioned about the Bulletin on "Integrated Pest Management" where in details have been given. The members requested the Director to circulate the bulletin to all members. The Council was informed of the number of projects the Soil Laboratory is undertaking in Dikom which is beneficial to the industry. Clarification of the new Advisory Officer was given to the Council.

Mr D Raj informed the Council that although evaluation of the Nano fertilisers has been taken by TRA, the same should be apprised to the members before it is recommended.

The Note circulated by Mr M K Varma was also discussed. The Council also discussed in detail the points raised by Mr V S Gulia. The reply to the mails will be given by the Director in due course.

4. Membership & Finance :

- a) Membership Subscription : The Secretariat apprised the membership subscription status of the Association as on 24th June 2022 for the financial year 2022-23: He stated that the collection of subscription is moderate. Few large companies are yet to clear their subscription. The Council reviewed the entire subscription status and decided to follow-up through letters to each member for payment.

Financial Status of the Association:2022-2023								
							2021-22	2022-23
Membership	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Till 24.06.2021	Till 24.06.2022
Subscription							last year	Current year
A.Ordinary								
Billing	1330.4	1574.4	1822.03	1842.89	1881.8	1898.48	475.44	440.73
Collection	1124.9	1300.68	1362.08	1376.21	1486.17	1404.16	177.18	252.47
Rebate/Discunt	57.93	56.51	60.84	55.53	36.69	41.03	5.6	12.37
Net Recovery Total	1182.9	1357.19	1422.92	1431.74	1522.86	1445.19	182.78	264.84
Arrear/Outstanding Recovery	98.08	100.28	116.97	220.31	237.7	122.44	23.04	53.22
Gross Total Collection:	1280.9	1457.47	1539.89	1652.05	1760.56	1567.63	205.82	318.06
RECOVERY % WISE(CURRENT YR.)	89%	86%	78%	78%	81%	76%	38%	60%
OVER ALL RECOVERY % WISE	96%	93%	85%	90%	94%	83%	43%	72%
B. Associate								
Current	14.37	20.8	20.8	21.55	7.79	12.98	0	3.19
Arrear	1.61	5.63	9.78	10.25	9.16	9.82	0	0.7
Total:	15.98	26.43	30.58	31.8	16.95	22.8	0	3.89
GRAND TOTAL COLLECTION:(A+B)	1296.9	1483.9	1570.47	1683.85	1777.51	1590.43	205.82	321.95
LESS: REBATE/DISCOUNT	57.93	56.51	60.84	55.53	36.69	41.03	5.6	12.37
NET TOTAL COLLECTION(A+B)	1239	1427.39	1509.63	1628.32	1740.82	1549.4	200.22	309.58

b) Financial Status of the Association

The Secretary also informed that the Association has not received any funds from Tea Board of India for the current quarter till date. The indent for the first quarter has been raised.Rs.76 lakhs is receivable from Tea Board from the previous financial year. The matter has been taken up with the Financial Advisor & CAO, Tea Board of India and he has taken up the matter with Ministry. It was informed that funds for first quarter may be delayed due to opening of new CNA Accountby Tea Board. The Secretary stated that salaries for June 2022 may be delayed.

5. Membership criteria for tea buyer companies :

The Council discussed the admission of tea buying companies as Associate members of the Association. It was decided that the Association can admit tea buying companies as members and the annual fees for membership will be as follows:

Admission fees : Rs.2000

Companies handling tea less than 10 million kgs. per year : Rs.5 lakhs pa

Companies handling above 10 million kgs per year : Rs.10 lakhs pa

The buyer member will be eligible for the following :

- a) Information regarding crop and weather data
- b) Subsidised testing at Tlabs
- c) Privy to research facilities of the Association

6. Corpus for funding dues of retired employees :

The Director and the Secretary had a detailed meeting with the retired employees of the Association on 13th May, 2022. In the discussion, it was proposed that Association should consider building a corpus from the industry for payment of backlog retirement dues and future dues for retiring people. Members discussed and decided to form a corpus to fund retirement dues of employees. It was decided to park all funds from buyer members for creation of the corpus received as subscription. The Council resolved to open a separate account for the same.

7. MOU for Patanjali Research Institute :

The MOU with Patanjali Research Institute was discussed. Few members stated that TRA should focus on core areas. Since the proposal has been suggested by Government of Assam, the Council approved the MOU with Patanjali Research Institute.

8. Appointment of new Director TRA :

The Chairman informed the Council that the Selection Committee formed by the Council took interview of 8 candidates on 18th May, 2022. Out of all candidates, Dr Azariah Babu was found to be suitable. The Executive Committee at its meeting on 3rd June, 2022 approved the appointment of Dr Azariah Babu in the 75,500 – 80,000 with official accommodation, mediclaim, LTA and allowances applicable. The Council approved the appointment of Dr Azariah Babu as the new Director with effect from 1st July, 2022 for a period of 3 years.

9. Change of Banking signatories :

- a) Members discussed on inserting the name of Dr.A.Babu as Director for all bank accounts, statutory bodies such as PF and others of Tocklai Tea Research Institute in place of retiring Director Dr. AKBarooah.

“Resolved that Dr. ABabu will be the new authorised signatory for all bank

accounts of Tocklai Tea Research Institute in place of Dr.A.K.Barooah”

“RESOLVED further that the copy of the above resolution be forwarded to the concerned branch of all banks for necessary action at their end”.

- b) Members discussed on the mode of operation of all bank accounts and statutory bodies like PF of North Bengal Regional R & D Centre, Nagrakata and decided as follows:



“Resolved that Mr. Sam Varghese will be the first signatory in place of Dr.A.Babu and the name of Dr.A.Babu will be deleted from signatory list.”

“Further resolved, that Dr. Prabhat Pramanik will be inserted as new authorised signatory for the banking operations and the mode of operation will remain same with first and additional signatory.”

10. AOB :

- a) The Secretary informed the Council that most of the TRA members follow Good Agricultural Practices and Good Manufacturing Practices recommended by TRA. It is proposed that based on the evaluation of the Advisory Officers regarding GAP and GMP followed by the gardens, all members who are regular paying members would be certified by TRA under the logo “TCertified”. This would ensure compliance of GAP and GMP by all member gardens. After a year based on the evaluation of all estates, TRA may institute awards in different categories and regions. The proposal would have no financial implications for TRA member companies. The Council appreciated the proposal and unanimously approved the same.
- b) The Council discussed to finalise the date of AGM and tentatively decided on 23rd September, 2022. The date may be changed according to exigency.
- c) The Council discussed the issue on the methodology of testing teas. Mr Vivek Bhasin stated Case No.12746 -12747 of 1996 between MD Harrison and Union of India. The Chairman stated that it will be taken up with Tea Board of India so that the matter can be appraised to FSSAI.
- d) Ms.NayantaraPalchoudhuri, Vice-Chairperson, TRA thanked Dr A K Barooah for his exemplary services for last 6 years as Director of TRA. All members unanimously expressed their deep sense of appreciation to Dr Barooah. The Chairman, requested all members to attend the official farewell function of Dr Barooah in the evening of 29th June, 2022 at Tollygunge Club.

The meeting ended with a vote of thanks to the Chair.

 
(PK Bezbaruah) (J Phukan)
Chairman Secretary

14th July 2022