

BANGLADESH TEA RESEARCH INSTITUTE

Srimangal-3210, Moulvibazar

Monthly Report- Oct, 2018

(A) Director's visit

Date	Purpose
17 th - 19 th Oct	Attended the 105 th coordination meeting of BTB, Chattogram.

(B) Divisional Research and services/ activities

Activities	Agro	Bot	Biochem	Ento	Plant Path	Soil Sci	Stat & Eco	Tea Tech	Total
Number of experiments	08	32	-	07	06	07	03	-	63
No. of experimental visits	15	08	-	03	02	08	03	-	39
Advisory visits	→								05
Correspondences	02	-	-	02	02	14	-	-	20
Official visits	01	-	-	01	-	01	-	-	03
Workshops	→								02
Tea Tasting Session	-	-	-	-	-	-	-	-	-
Tea sample Tasting	-	-	-	-	-	-	-	-	-
MTC Modules (hrs)	8.5	-	-	-	-	6.0	-	-	14.5
Publications	-	-	-	-	-	-	-	-	-
Soil analysis for nutrient	-	-	-	-	-	70	-	-	70
Soil analysis for nematode	-	-	-	12	-	-	-	-	12
Fertilizer analysis	-	-	-	-	-	04	-	-	04
Compost analysis	-	-	-	-	-	07	-	-	07
Water analysis	-	-	-	-	-	-	-	-	-
Pesticide efficacy analysis	-	-	-	-	-	-	-	-	-
Fungicide efficacy analysis	-	-	-	-	-	-	-	-	-
Herbicide efficacy analysis	-	-	-	-	-	-	-	-	-
Residue analysis (Expt.)	-	-	-	-	-	-	-	-	-
Residue analysis (garden)	-	-	-	-	-	-	-	-	-

General comments: Divisional research and activities are satisfactory.

C. Research

Division: Agronomy

Total number of experiments : 08

Total experimental visits : 15

Sl. No.	Name of the experiments	No of visits	Activities during the reporting month
1	Effect of different pruning cycles on the yield of different mature clonal tea	-	Three round of data were collected during the reporting month.
2	Comparative study on yield and yield related parameters of different clones released from BTRI	-	Data on harvested green leaf yield were collected.
3	Development of tools for easy and effective transplanting of tea saplings in the nursery.	-	It is going on under the supervision of SSO.
4	Effect of integrated nutrient management for raising of clonal tea plants through direct poly-bag planting method.	-	Regular monitoring, pest controls, management practices are given as and when needed; and relative data collection is going on.
5	Effect of different types of pruning on yield and quality of clonal tea.	-	100 shoot fresh and dry weight, number of plucking point/bush and green leaf yield data of two round were collected.

6	Study on different climatic parameters to observe the impact of climate change in relation to tea production in Bangladesh.	-	Data collection is going.
7	Effect of different types of plucking policies on yield and quality of tea.	-	Data on harvested green leaf yield were collected.
8	Effect of different types of compost on growth and development of clonal tea.	-	Intercultural operations were continued.

N.B: All of the above 8 experiments are conducted at the BTRI main Farm, Srimangal. So, all of the experimental visits were accomplished at BTRI Farm by the divisional scientists at different dates to collect data and for intercultural operations.

Division: Botany

Total number of experiments : 32

Total experimental visits : 08

Sl. No.	Name of the experiments	No of visits	Activities during the reporting month
1	Selection of Vegetative Clones at Shumshernugger T. E., Section Main Div. Sec. No. 9		1. Selection has been continued. 2. Cuttings in the nursery are kept under observation in order to find out their rooting ability.
2	Selection of Vegetative Clones at Amo T. E., Section No. 1		1. Selection has been continued. 2. Cuttings in the nursery are kept under observation in order to find out their rooting ability.
3	Selection of Vegetative Clones at Baraoorah T. E., Section No. 8	-	1. Selection has been continued. 2. Cuttings in the nursery are kept under observation in order to find out their rooting ability.
4	Yield and Quality Trial of Test clones Selected from Shumshernugger and Amo T. Es., Test clones Sh/D/11/313, A/8/8, A/17/7 and A/22/39 against Control BT1.		Weekly data has been recorded.
5	Yield and Quality Trial of Test clones Selected from Amo T. E. Test clones A/8/01, A/17/22, A/22/27 and A/22/40 against Control BT1.		Weekly data has been recorded.
6	Yield and Quality Trial of Test clones Selected from Chandpore, Shumshernugger and Amo T. Es.; Test clones C/J1/10, Sh/B/6/59, Sh/B/6/62 and A/8/24 against Control BT2.		Weekly data has been recorded.
7	Yield and Quality Trial of Four Test clones Selected from Shumshernugger T.E.; Test clones Sh/B/6/36, Sh/B/6/38, Sh/B/6/55 and Sh/B/6/67 against Standard BT1.		Weekly data has been recorded.
8	Yield and Quality Trial of Six Test clones – MZ/39, E/4, D/13, B2T1, BR2/97 and SDL/1 against Standard BT2.		Weekly data has been recorded.
9	Yield and Quality Trial of Four Test clones Selected from Amo T. E.; Test clones – A/8/37, A/8/55, A/8/62 and A/8/66 against Standard BT2.		Weekly data has been recorded.
10	Yield and Quality Trial of Four Test clones Selected		Weekly data has been

	from Phulcherra, Amo and Shumshernugger T. Es.; Test clones – A/17/16, Ph/9/1, Ph/9/9 and Sh/B/6/46 against Standard BT1.		recorded.
11	Yield and Quality Trial of Four Test clones Selected from Phulcherra and Hybrid Progeny; Test clones– Ph/9/4, Ph/9/25, Ph/9/40 and BS/67 against Standard BT5.		Weekly data has been recorded.
12	B2-44: Yield and Quality Trial of Three Test clones Selected from Amo and Phulcherra T. Es.; Test clones– A/8B/1, Ph/9B/1, Ph/9/11 and against Standard BT1.		Weekly data has been recorded.
13	Yield and Quality Trial of Three Test clones Selected from Amo, Phulcherra and Shumshernugger T. Es.; Test clones- A/8/61, Ph/9/68A, Sh/D/11/18 (retrial from Expt. B2-26) and One Introduced Clone SC/12/28 against Standard BT2.		Weekly data has been recorded.
14	Yield and Quality Trial of Four Test clones Selected from BTRI Farm (Dulia Section); Test clones – D1/18, D/6, D/10 and D/12 against Standard BT5.		Weekly data has been recorded.
15	Yield and Quality Trial of Four Test clones Selected from Phulcherra T. E. and BTRI Germplasm Bank; Test clones-Ph/9/92, BS/3, Ph/9/108 and G/61/8 against Standard BT15.		Weekly data has been recorded.
16	Yield and Quality Trial of Four Test clones Selected from Shumshernugger and Amo T. Es. Test clones – A/8/124, Sh/10/2, A/8/125 A/11/38 against Standard BT2.		Weekly data has been recorded.
17	Yield and Quality Trial of Four Test clones Selected from Shumshernugger T.E. (Sh/10/5, Sh/D/13/4 and Amo T. Es. Test clones – A/8/128, BS/91/6, against Standard BT2.		Weekly data has been recorded.
18	Yield and Quality Trial of Four Test Clones Selected from Baraoorah T.E., Shumshernugger T.E. and Amo T. Es. Test Clones – B/8/79, Sh/9/43 and A/8/194 against Standard BT2 and BT17.		Weekly data has been recorded.
19	Yield and Quality Trial of Two Test Clones Selected from Baraoorah T.E., and Shumshernugger T.E. Test Clones – B/8/79 and Sh/9/71 against Standard BT2, BT17 and BTS1.		Weekly data has been recorded.
20	Yield and Quality Trial of Two Test Clones Selected from Baraoorah T.E., and Shumshernugger T.E. Test Clones – B/8/66 and Sh/8/61, against Standard BT2, BT17 and BTS1.		Weekly data has been recorded.
21	Yield and Quality Trial of Four Test Clones Selected from Baraoorah, Shumshernugger and Mirzapure T.E. (T1, T2, T3 and T4 against Standard BT2.		Newly established long term experiment.
22	Controlled Pollination between Selected Clones/Agrotypes and Selection of Generative Clones for the Establishment of Clonal Seed Reserve.		-
23	Establishment of a Biclinal Seedbarie with Clones TV18 and BT3.		-
24	Comparative Yield and Quality Trial of BTRI Released Biclinal Stock BTS1, Biclinal Stock T18B3, Allynugger Polyclonal Stock (ANPS), Phulbari General Seed Stock (PBS) and Clone BT1.		Weekly data has been recorded.
25	Comparative Trial of 4 Biclinal Seed Stocks (BTS1, BTS3, TV18 × BT3 & TS463) and 3 Parental Clones		Weekly data has been recorded.

	(BT1, TV1 & TV19).		
26	Survey and Conservation of Gene Resources of Tea in Bangladesh.		Plucking is continued and kept under observation.
27	Morphological characterization of BTRI released clones, some test clones and wild genotypes.		Data has been recorded.
28	Developing a sustainable and cost effective protocol for manufacturing health benefitted green tea and its derivatives (value added green tea).		Data has been recorded.
29	Study on seasonal effect and different clonal effect on recovery percentages of green tea.		Data has been recorded.
30	Screening of drought tolerant variety of tea at the nursery level.		Weekly data has been recorded.
31	Screening of drought tolerant variety of tea in the field condition upto 3 years of planting.		Weekly data has been recorded.
32	B4.4. Effect of different types of mulching materials on morpho-physiological characteristics of tea.		This experiment will be started very soon (upcoming drought period)

N.B: Eight (08) experimental visits were accomplished at BTRI Farm by the divisional scientists at different dates to collect data and for intercultural operations.

Division: Entomology **Total number of experiments** **: 07**
Total experimental visits **: 03**

Sl. No.	Name of the experiments	No of visits	Activities during the reporting month
1	Evaluation of sticky traps against Thrips & Looper caterpillar	-	Yellow sticky trap had been set against thrips in residue plot of BTRI farm. Yellow traps captured large number of Thrips and less number of non targeted species. Experiment is completed.
2	Evaluation of some indigenous plant extracts against thrips in tea	-	Five indigenous plants viz., Akonda, Castor bean, Garlic, Nishinda and Tobacco were evaluated against thrips at 5.0, 7.5 and 10% (w/v) conc. Among them, Tobacco and Garlic showed maximum mortality percentage. Whereas, Akonda showed less mortality of Thrips. Experiment is completed.
3	Evaluation of commercial biopesticides against red spider mite in tea	-	Two Entomopathogens: <i>Metarhizium anisopliae</i> and <i>Pseudomonas fluorescens</i> were tested against red spider mite at 24, 48 and 72 HAT in laboratory condition. <i>M. anisopliae</i> showed highest efficacy on mortality than <i>P. fluorescens</i> over control. The rate of mortality increased with the increasing of time and dose. Experiment is completed.
4	Screening of tea clones for major insect pests in tea	-	Studies were done through monitoring and observing the degree of infestation against <i>Helopeltis</i> & RSM in tea clonal block (BT1-BT20) at BTRI. Experiment is completed.

5	Screening of pesticides against <i>Helopeltis</i> , Red spider mites, Termites, Nematodes and Thrips in tea	-	Trail for <i>Helopeltis</i> and Red spider mite had been initiated during reporting month. Data collection is being continued.
6	Determination of residue level of commonly used pesticides in tea	-	The pesticides Chlorpyrifos & Cypermethrin had been sprayed in the exp. plots & samples were made at different interval after spraying. Made tea sample was processed from individual treated plots.
7	Study on the compatibility among different pesticides in tea	-	To find out the combined effects for both <i>Helopeltis</i> and red spider mite. Tundra and Magister were applied singly against <i>Helopeltis</i> and red spider mite, respectively. Combination of these two insecticides was also applied against to these pests. About 71% efficacy was found in combined application plot against those pests. Efficacy was better in singly applied plot.

N.B: All of the above 7 experiments are conducted at the BTRI main Farm, Srimangal. So, all of the experimental visits were accomplished at BTRI Farm by the divisional scientists at different dates to collect data and for intercultural operations.

Division: Plant Pathology **Total number of experiments** : 06
Total experimental visits : 02

Sl. No.	Name of the experiments	No of visits	Activities during the reporting month
1	Management of tea diseases (Black rot and Red rust) with Plant Growth Promoting Rhizospheric microbes.	-	There are four microbes like <i>Bacillus</i> , <i>Pseudomonas</i> , <i>Streptomyces</i> , <i>Trichoderma</i> were applied on Red rust disease. Data are being compiled. Among these microbes less disease severity are being observed in <i>Trichoderma</i> treated plots. Kept under observation.
2	Advent and Economic Importance of Epiphytic Red Rust of Tea: Assessment, Causes and Remedies.	-	Fields were kept under observation. Data are being recorded.
3	Identify the potential source of infection of different tea diseases and capabilities for disease development.	-	Fields were kept under observation. Data are being recorded.
4	Identification of VAM and determination of their potentiality in tea cultivation.	-	Data are being recorded on growth and development of nursery plants.
5	Screening of new fungicides and herbicides against different diseases and weeds in tea	-	No fungicides and herbicides were applied against respective pests during this month.
6	Studies on Integration and Economics of Nitrogen fertilizer and Integrated Weed Management in young mature tea.	-	Fields were kept under observation. Data are being recorded.

N.B: All of the above 6 experiments are conducted at the Bilashcherra Experimental Farm, Srimangal. So, all of the experimental visits were accomplished at BTRI Farm by the divisional scientists at different dates to collect data and for intercultural operations.

Division: Soil Science**Total number of experiments****: 07****Total experimental visits****: 08**

Sl. No.	Name of the experiments	No of visits	Activities during the reporting month
1.	Response of dolomitic lime and its effect on the changes of soil properties and yield of mature tea	-	Data are being collected
2.	Effect of vermicompost on soil properties , growth and yield of mature tea	-	Data are being collected
3.	Status of Micronutrients (B, Mo, Zn, Mn, Fe & Cu) in some selected tea soils & its effects on the growth and yield of young Tea and mature tea	-	Zinc, Iron, Manganese and copper analysis of the collected soil samples has been completed. Soil samples collection are under process.
4.	Studies on physical properties of some selected tea soils of Bangladesh and their influence on chemical properties and yield of tea.	-	Soil sample collection is going on.
5.	Present status of toxic heavy metals (Pb, Cd, Hg, Cr) in tea soils, green leaves and made tea in Bangladesh	-	Not started yet due to the technical error in Atomic Absorption Spectrophotometer.
6.	Uses of Bio char as a soil amendment and its effect on tea soil properties	-	Data are being collected
7.	Determination of critical values of nutrients in tea soil and plant leaf in Sylhet, Chittagong and Panchagarh region.	-	Soil samples collection is going on.

N.B: Four (03) experimental visits were accomplished at BTRI farm and five (05) experimental visits were accomplished at Bilashcherra Experimental Farm by the divisional scientists at different dates to collect data and for intercultural operations.

Division: Statistics and Economics**Total number of experiments****: 03****Total experimental visits****: 04**

Sl. No.	Name of the experiments	No of visits	Activities during the reporting month
1	Economic efficiency of some selective test clones and standard clones at BTRI farm	03	The experiment has started for the analysis of economic performance of the test clones at BTRI farm. The data collection of the experiments has running.
2	Adoption and comparative performance of BTRI innovative technologies	-	Out of 164 gardens (T.Es.) 88 have sent the field-up questionnaires and the data of other T.Es. were collected from the monitoring report of PDU. Partial of the data was compiled and presented in the 74 th RSC meeting. The rest of the

			data are being under compiling.
3	Economics of some selected bought leaf factories at Panchagarh	-	The preparation of data collection sheets, questionnaire is now under supervision and in progress.

D1. Advisory Visit: 05

SL. No.	Name of T.E.	Date of visit	Nature of problem(s) observed	Suggested remedies/ recommendations	Name of Scientist(s)
1.	Dilkusha T.E	11.10.18	Maintenance of young tea area of about 56 acre, <i>Helopetis</i> & Red spider mite	Control measures suggested	Dr. Toufiq Ahmed, PSO Md. Jahangir Alam, SO
2.	Islamabad T.E.	11.10.18	Foliar application of overdose urea fertilizer, <i>Helopetis</i>	Control measures suggested	Dr. Toufiq Ahmed, PSO Md. Jahangir Alam, SO
3.	Lalchand T.E.	16.10.18	Inhibition of rooting at nursery, vacancy in 16A section and lack of shade in 6C section.	Control measures suggested	Dr. M.A.Aziz, PSO
4.	Nalua T. E.	16.10.18	Weed infestation in section no. 2009, red spider mite has traced in section no. 7, over callusing has occurred in nursery cuttings.	Control measures suggested	Dr. M.A.Aziz, PSO
5.	Rampore T.E	23.10.18	Leaf drying and followed by death of very young tea plants.	Control measures suggested	Mr. Syeful Islam, SSO

D2. Advisory activities under substation:

Date of Visit	Name of the T.E/ Small grower	Name of Scientist(s)	Nature of problem observed	Suggested remedies / recommendations
-	-	-	-	-

E. Correspondence

Name of the Division	No. of Correspondence	Date of Correspondence	Name of the T.E (s) / Organization	Official visit
Agronomy	02	18.10.18	Dilkusha T.E.	01 (GTI, BAU)
		18.10.18	Islamabad T.E	
Botany	-	-	-	-
Biochemistry	-	-	-	-
Entomology	02	18.10.18	Dilkusha T.E.	01 (BTB)
		18.10.18	Islamabad T.E	
Plant Pathology	02	15.10.18	Surma T.E	-
		23.10.18	Rampore T.E	

Soil Science	14	03.10.2018	Patrakhola T.E	01 (BTB)
		03.10.2018	Kapnapahar T.E	
		04.10.2018	Lalchand T.E	
		04.10.2018	Mazdehee T.E	
		04.10.2018	Amo T.E	
		10.10.2018	Director, PIU-BARC, NATP-II	
		14.10.2018	Managers of different gardens	
		15.10.2018	Monipur T.E	
		15.10.2018	Amo T.E	
		14.10.2018	Sagurnal T.E	
		25.10.2018	Rema T.E	
		25.10.2018	Ameenabad T.E	
		29.10.2018	Phulbari T.E	
		31.10.2018	Director, PIU-BARC, NATP-II	
Stat. & Econ	-	-	-	-
Technology	-	-	-	-
Total	20			03

F. Reports on soil and fertilizer analysis

Name of T.E	No of soil analyzed	No of fertilizer analyzed	No of Compost analyzed	No of water analyzed	Date of reporting	Recommendation
Patrakhola T.E	-	-	Compost – 03	-	03.10.2018	Quality assessment
Kapnapahar T.E	-	-	Compost – 02	-	03.10.2018	Quality assessment
Lalchand T.E	-	SOP - 01	-	-	04.10.2018	Quality assessment
Mazdehee T.E	-	SOP - 01	-	-	04.10.2018	Quality assessment
Amo T.E	-	SOP - 02	-	-	04.10.2018	Quality assessment
Monipur T.E	05	-	-	-	15.10.2018	Fertilizer recommendation
Amo T.E	09	-	-	-	15.10.2018	Fertilizer recommendation
Sagurnal T.E	-	-	Compost – 02	-	14.10.2018	Quality assessment
Rema T.E	06	-	-	-	25.10.2018	Fertilizer recommendation
Ameenabad T.E	19	-	-	-	25.10.2018	Fertilizer recommendation
Phullbari T.E	31	-	-	-	29.10.2018	Fertilizer recommendation
Total	70	04	07	-		

G. Distribution of planting materials and production of BTRI

Distribution from	Distribution of planting materials			Production		
	Fresh cuttings	Rooted cuttings	Improved seeds (kg)	Green leaves (Kg)		
				BTRI	BEF	
BTRI	125000	900	-	BTRI	10289	82851
Fatickcherri	320000	-	-	BEF	72562	
Kaliti	25000	-	-			10112
Total	470000	900	-			98252

General comments: Distribution of planting materials depends on the demand of the tea estates/ tea growers

H. Balance sheet of made tea (Black Tea)

Month	Reserve (Kg)			Consumption (Kg)				Present Balance
	BF	Production	Total	Local	BTB Sales Centre	Invoiced	Total	
Oct, 2018	13054	18600	31654	313	60	23100	23473	8181
Oct, 2017	30989	29285	60274	221	200	33000	33421	26853
Jan – Oct, 18	22625	108640	131265	8229 (TW=4700)	180	114675	123084	8181
Jan – Oct, 17	19386	182520	201906	3423	800	170830	175053	26853

I. Balance sheet of made tea (Green Tea)

Month	Received green leaf (kg)	Produced green tea (kg)	Progressive total (Kg) (January to Oct' 2018)
Oct, 2018	522.5	83.60	390.51

J. Balance sheet of made tea (White Tea)

Month	Received green leaf bud (kg)	Produced white tea (kg)	Progressive total (Kg) (January to Oct' 2018)
Oct, 2018	-	-	0.31

K. Weather report for meteorological station, Srimangal

Month	Temperature (°c)		Rainfall of the month (mm)	Nos. of rainy days	Total rain fall up to the month (mm)	Evaporation of the month (mm)	Sun shine Hrs	R.H. %	Dew point (°c)
	Max ^m	Min ^m							
Oct, 18	32.35	21.83	174	7	2180	96.60	6.37	81.21	23.05
Oct, 17	31.60	23.10	335	13	3614	98.90	5.90	81.90	24.10

General comments: Weather report varies from season to season

L. Delivered lecture hours for postgraduate diploma / certificate course at MTC

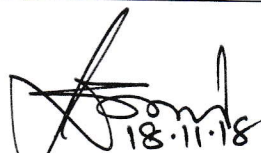
Divisions	Date of lecture	Course Title	Resource Person	Time of the month (hrs)
Agronomy	09.10.18	Pruning, Tipping, Plucking, Irrigation and Drainage management for tea	Dr. Toufiq Ahmed, PSO	06
	10.10.18	Young Tea Management	Mr. Md. Imran Hossen, SO	2.5
Biochemistry	-	-	-	-
Botany	-	-	-	-
Entomology	-	-	-	-
Plant Pathology	-	-	-	-
Soil Science	08.10.18	Mulching: Importance & Effect of mulching and different mulch materials	Mr. Apu Biswas, SSO	06
		Calculation of mulch materials and application practice in young tea		
		Manuring for young tea: Doses and application		
Stat. & Econ	-	-	-	-
Technology	-	-	-	-
Total				

M. Training workshops for small tea grower:

Sl. No.	Date	Venue	Subject matter	Resource person	Participants	How tea industries will be benefited
-	-	-	-	-	-	-

N. Workshops conducted:02

Sl. No.	Date	Venue	Subject matter	Resource person	Participants	How tea industries will be benefited
1.	04.10.18	Patrokhola T.E	Spraying techniques of insecticides, miticides and fungicides	Mr. Md. Syeful Islam, SSO.	Managers, Assistant managers, field staffs of NTC's Tea estates	They will be able to take necessary actions for pesticide spraying accurately.
			Integrated management of Looper caterpillar in tea.	Mr. Md. Jahangir Alam, SO		The speaker discussed on the management of tea caterpillar in integrated way. The managerial staff of the tea estates also shared their field experience and asked different questions on caterpillar management. They gathered knowledge on their seasonal abundance, reasons for pest outbreak, management which will help them for better management of insects in tea.
2.	06.10.18	BEF	Plucking	Dr. Toufiq Ahmed, PSO	Field Assistants, Sorders, Jogalis and Pluckers	An workshop was organized to maintain the plucking standard, plucking round, suggestion for leaving the small shoots for next round and warning to use or carry any unwanted plucking device e.g. 'kachi' in plucking area.



(Dr. Mohammad Ali)
Director