

সার্কুলার নং- ১৩৯  
Circular No. 139



তারিখ: ৬ আশ্বিন ১৪২৩  
September 23, 2016

## ক্লোন বিটি১৯ এর অবমুক্তি RELEASE OF CLONE BT19

বাংলাদেশ চা গবেষণা ইনস্টিটিউট  
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$$k\lg^{1/2}j - 3210, \lg^2 j \text{ fxe}vRvi$$

*mvK<sub>2</sub>vi* bs 139

Zwili: 23 mptp, 2016 WL.

# tko je to 19 Gi Aegys

***fngKv***

tKvb GKK gvZe<sub>1</sub> ntZ A<sub>1</sub>R c<sub>x</sub>uZtZ Drcv<sub>1</sub> Z Privi mgwōtKB tKvb ejv nq| eskue<sub>1</sub>ti i G c<sub>x</sub>uZ, A<sub>1</sub>R eskue<sub>1</sub>ti (Vegetative propagation) ev tKvbuj tōcvtMkb brtg cwiuPZ| tKvb uttj Kkb Z<sub>1</sub> 'Guj U' gvZe<sub>1</sub> evQvB c<sub>x</sub>uZ Pr Drcv<sub>1</sub> bKvi x t<sub>1</sub>k<sub>1</sub> tj vtZ AnaK Drcv<sub>1</sub> b I Dbū<sub>1</sub> YMZ gvbmc<sub>1</sub>cbwPvtqi RvZ D<sup>m</sup>veb Kivi Ab<sub>1</sub>Zg cāvb Dcvq| evsj vt<sub>1</sub>tk Pvtqi Drcv<sub>1</sub> b I YMZgvb ew<sub>1</sub>tZ tKvbmg<sub>1</sub> LyB<sub>1</sub> i<sub>1</sub>zCy<sub>1</sub>FingKv cij b Ki tQ| Pvtqi Drcv<sub>1</sub> b I YMZgib ew<sub>1</sub>i j t<sub>1</sub> evsj vt<sub>1</sub>k Pr MtelYv Bbw÷uDU Pr uk<sub>1</sub>ti i Rb<sub>1</sub> Dbū<sub>1</sub> RvZ D<sup>m</sup>veb m<sub>1</sub>v m<sub>1</sub>Pō| D<sup>m</sup>veA<sub>1</sub>v wefv<sub>1</sub>ti i tKvb evQvB I msKivq<sub>1</sub> MtelYvi dj k<sub>1</sub>uZtZ evsj vt<sub>1</sub>k Pr MtelYv Bbw÷uDU Pr uk<sub>1</sub>ti i Rb<sub>1</sub> Av<sub>1</sub>k<sup>o</sup> (Standard), D<sup>m</sup>Pdj bkxj (Yield) Ges D<sup>m</sup> YMZgib (Quality)– G uZbu tKvbuj K<sub>1</sub>vU<sub>1</sub>M<sub>1</sub>i tZ G ch<sub>1</sub>S<sub>1</sub>18u tKvb meg<sub>1</sub> K<sub>1</sub>ti tQ| tKvb D<sup>m</sup>veb<sub>1</sub> GB avivem<sub>1</sub>KZvq, evsj vt<sub>1</sub>k Pr MtelYv Bbw÷uDU GLb Zvi c<sub>1</sub>te<sub>1</sub> D<sup>m</sup>veZ tKvbmg<sub>1</sub>ti m<sub>1</sub>½ beZi m<sub>1</sub>st<sub>1</sub>h<sub>1</sub>Rb uttm<sub>1</sub>te neu<sub>1</sub>U19 brtg Avi I GK<sub>1</sub>u Dbū<sub>1</sub> RvZi ŪAv<sub>1</sub>k<sup>o</sup> tKvb<sub>1</sub> (Standard Clone) Gi meg<sub>1</sub> tNvI Yv Ki tQ| evQvB Ges gvV cix<sub>1</sub>YK<sub>1</sub>uj tKvb<sub>1</sub>U<sub>1</sub> m<sub>1</sub>st<sub>1</sub>K<sub>1</sub>uZK bvg uQj G/17/7|

**new U19 Gi Drm**

tKvbu WvbKvb eř`m(ersj vř`k) ijjgtUřWi e`e`raxb Avgypř evMřbi 17 bs řmKkb nřZ erQvB Kiv  
nq| Pr evMbıU j`ıciy f`ij řZ Aew`Z, Rjerqyl feKıMZ w`K ř\_K GjıkwU LircēY GjrKv  
brtg cwiPZ| řmKkbıUřZ 1993 mřb c0\_ıgK mřj Kkřbi KvR AvıçKivi ci H GKB eQtii  
26.07.1993 Bs ZwiřL gvZeřıUřK G/17/7 brtg PıryZ Kiv nq Ges c0\_ıgK chřq ubeřřbi  
Dřřřk` Gi `ewk0mqř řiKWřř Kiv nq|

gV I bmmi chiqi c0igK ibixTtY tk1 1996 m1b evQvBKZ.ArTj vP tKvbuUmn m1ebvgq Av I  
 1ZbuU tKv weUAviAvB Lvgti 1mcZ 1N1gqv x Drcv b I 1YMZgvb 1bYQx cixTlvq ASf2 Kiv  
 nq/ cixTlvq cbuU 5x5 j 1uUb 1qvi 1WRvB1b 105 tm.ug.x60 tm.ug. 11vcY 11Zj1e1Z/ GL1tb gvb  
 1bvgqK (Control) 1ntmte tUvKj vB (Tocklai) Gi 11Uv1WRvZ 1Uv1 ASf2 Kiv ntqQj | G/17/7  
 m1KZf2 tKvbuU c13 eq 1Ae1q Drcv b, 1YMZgvb, bmmi chiqi Dch3Zv, Liv m1n0Zv Ges  
 qv ch1eTtY m1ebvgq tKv 1ntmte c13xqgv ntqQj/

## mvaviY`enkó`

tKvbiU gj-Z Avmvg RvZi | Gi KvU mYvg I mYeb`-I Ges cPž kvLv-cKvLv`enkó | kvLv-cKvLv cġ Lvav Moŋbi (Semi orthotropic) mYeb`-Z | QvUvB DĖi bZb`KKj tqi AvMgb I ep` hġ\_ó mġšI RbK | MvQvUi cvZvi is nij Kv meR, gvSvvi AvKvZi-mvgv` cġ-; D<sup>3</sup>/<sub>4</sub>j I gmY | cvZv KvUv mġšI KQbLv Lvav Ae`v`v`enkó (Semi-erect leaf pose) | cvZvi AMFvM mvgv` mYbvi` Ges cwi mvgv mYvg LvBKvUv (Uniformly serrated) | PqbZj (Plucking table) tek Nb Ges cPž PqbŋvM` cġ`v`enkó | Pqbcj` tKvgj I gvSvvi AvKvZi |

## mviv 1. vevU19 I vUvF1 Gi Zžbvj-K AvvK`enkó`

μgK bs	`enkó`	G/17/7 (tU ÷ tKv)	vUvF1 (gvbvqvvgK)
1.	100 meR i tUi I Rb- Fresh weight of (g) 100 shoot- (2L+B)	96.50	77.5
2.	iU WvB g`vUv - Shoot dry matter (%)	22.75	17.10
3.	i tUi Mo`N` - Shoot length (cm) - (2L+B)	8.15	6.35
4.	cwi YZ cvZvi tġI dj - Mature leaf area (cm <sup>2</sup> )	45.00	36.50
5.	cġ dj tKi`N` - Leaf lamina length (cm)	12.50	11.69
6.	cġ dj tKi cġ - Leaf lamina breadth (cm)	5.30	5.50
7.	cġZ cġ dj tK eġ kb mSL`v - No. of bullation/leaf	13.75	12.10
8.	cġZ cġ dj tK LvRi mSL`v - No. of serration/leaf	82.60	81.00
9.	tdg di tġkb cġbs G cġB QvUvBKZ. Wtj i mSL`v - No. of pruning sticks/bush at FFP	18.50	15.10
10.	tdg di tġkb cġbs G cġB QvUvBKZ. Wtj i Mo I Rb- Weight of pruning litter/bush at FFP (kg)	1.30	1.10
11.	cwKs cġqŋvUi NbZ- Plucking point density /bush/year	455	395
12.	vCDvemm`vY Gi mSL`v- Pubescence (4 × 10x)	1520	1580

## bvmmiž tKvbiU`enkó`

bvmmiž tKvbiU tKko MRvŋvi ġgZv LgB fġj | ZvQvov bvmmiž Pvi vi ep` I Wj cvj vi v`i tek mġšI RbK |

## mviv 2: vevU19 I vUvF1 Gi Zžbvj-K tKko MRvŋvi ġgZv

tKvbi mġšKvZK bvg	bvmmiž tKko MRvŋvi ġgZv
G/17/7 (tU ÷ tKv)	90-95%
vUvF1 (gvbvqvvgK)	75-80%

tKko MRvŋvi = Lg fġj = >90%, fġj = >75% - <90%, g`g = <75%

## Drcv`nbK`enkó

tKvb`neU19 Ges gvb`nbqvgK`uUwF1 Gi Z`bvgj-K Drcv`b mviwY 3 I mviwY 4 G cõÈ nj | mviwY 3 G ewYZ`xNqgr`xgvV cix¶tYi djvdj nãZ cõZqgib nq th, AcwiYZ Ae`vq (1g nãZ 5g ermi) G/17/7 tKvb`Ui ewlR Mo Drcv`b uQj tnãi cõZ 1559 tKwR (1g ermãi i Drcv`b meqvRb Kti), Ges 1300 tKwR (1g ermãi i Drcv`b msthvRb Kti) | Z`bvgj-Kfite GKB mgãq, gvb`nbqvgK`uUwF1 tKvb`Ui ewlR Mo Drcv`b uQj tnãi cõZ 1625 tKwR (1g ermãi i Drcv`b meqvRb Kti), Ges 1341 tKwR (1g ermãi i Drcv`b msthvRb Kti) |

mviwY 4 Gi Z`bvgj cwiYZ eqmKvãj tKvb`Ui 12 eQãi i (6õ - 17Zg ermi) Mo Drcv`b uQj cõZ tnãi 3877 tKwR`Zwi Pv, Acicã¶j Z`bvgj-Kfite GKB mgãq gvb`nbqvgãKi t¶ãtã Zv uQj 3281 tKwR`Zwi Pv| tivcY cieZx®13Zg ermãi tKvb`Ui tnãi cõZ Drcv`b uQj 4,860 tKwR | hv`neU19 tKvb`Ui cix¶Y Pj vKvjxb tKvb GKK ermãi tiKWRZ.mtePP Drcv`b | H GKB ermãi gvb`nbqvgãKi tiKWRZ.mtePP Drcv`b uQj tnãi cõZ 3988 tKwR`Zwi Pv | neU19 Gi Mo Drcv`b AcwiYZ eqmKvãj gvb`nbqvgãKi tPtq hw`I Kg uQj (mviwY 3) cieZx®Z cwiYZ Ae`vq 12 eQãi i Mo Drcv`b gvb`nbqvgãKi tPtq 18% tekx uQj (mviwY 5) |

mviwY 3. AcwiYZ Ae`vq (1g-5g ermi) neU19 I uUwF1 Gi Z`bvgj-K`Zwi Pv Drcv`b (tKwR/tn.)

tKvb	AcwiYZ (1g - 5g ermi)					Mo
	1g wV-ãmUwv s /teãKs	2g cãbsKZ.	*3g w`d cãbs	4_ GdGdw cãbs	5g w`d cãbs	
G/17/7	265	704	1057	1570	2903	1300/1559**
uUwF1	225	636	1168	1701	2976	1341/1625**

\*Livi ermi, \*\*cõg ermãi i dj b msthvRb Kti/meqvRb Kti |

mviwY 4. cwiYZ Ae`vq (6õ-17Zg ermi) neU19 I uUwF1 Gi Z`bvgj-K`Zwi Pv Drcv`b (tKwR/tn.)

tKvb	cwiYZ (6õ- 17Zg ermi)											
	6õ Gj wC	7g wV Gm	8g Gg Gm	9g Gj Gm	10g Gj wC	11 Zg wV Gm	12 Zg Gg Gm	13 Zg Gj Gm	14 Zg Gj wC	15 Zg wV Gm	16 Zg Gg Gm	17 Zg Gj Gm
G/17/7	2564	3547	4147	4273	2773	3685	4453	4860	3904	3943	3814	4556
uUwF1	2404	2893	3389	3852	1739	2828	4274	3988	3191	3365	3465	3979



**mini 6.** *Livq* (drought stress) *weU19* I *Uwf1* Gi *Zxbvgj-K* *kvi xi eExq* *Ae*  $\bar{v}$

$\mu\text{gK bs}$	$\bar{e}\text{nkó}$	$G/17/7$ ( $tU \div tK\text{vb}$ )	<i>Uwf1</i> ( $gvb\text{vbqvgK}$ )
1.	<i>3q eQti tkKtoi Mo Mfxi Zv</i> ( $t\text{m.ig}$ )	32	28.75
2.	<i>iaU-i'U AbgvZ</i>	0.35	0.24
3.	<i>tcÜj b KbUuU</i> - Proline content ( $\mu\text{mol/g fr. wt}$ )	0.61	0.55
4.	<i>uj d I qvUvi tcvUbuKqvj</i> - Leaf water potential (LWP*-bar)	9.50	10.30
5.	<i>tgvU tKvfiwdj Gi cwi gvY</i> - Total chlorophyll ( $\text{mg g}^{-1}$ )	2.05	1.95
6.	<i>tKvfiwdj \div wevj uU BbUW</i> (CSI%)	92.00	88.00
7.	<i>mvUj vKmskdl Y Gi cwi gvY</i> - Photosynthesis ( $\mu\text{mol m}^{-2} \text{s}^{-1}$ )	9.50	8.95
8.	<i>cÜ`b Gi cwi gvY</i> - Transpiration ( $\text{m.mol m}^{-2} \text{s}^{-1}$ )	1.95	2.15
9.	<i>cvb e'envfi i qgZv</i> - Water use efficiency ( $\mu\text{mol/m mol}$ )	5.12	4.85
10.	<i>vi tjuUf uj d I qvUvi KbUuU</i> (RWC%)	74.00	69.00

*ubgvvb D'PZi Liv mndZv ubt`R Kti*

### *tcvKvgKo, tiMejvB cÜZtiava qgZv*

*evQvB* I  $\bar{x}\text{N}q\text{qv} \bar{x} \text{gvV}$  *cix*  $\text{qYKvtj}$  *tKvbi* *wefbetcvKv-gvKo*, *KvgtcvKv* I *tiMejvB cÜZtiava* *qgZv* *mššli* *RbK etj BbU  $\div$  *UDtUi* *weIqvfiEK* *weAvbmMY gšb`* *cÜvb Kti tQb* |*

### *DcthvMx cÜZcÜvj x*

*tKvbi* *ti qti A+\_W*. I *mmUim* (Crush-Tear-Curl) *Dfq cÜZcÜvj xB DcthvMx* | *Zte*  $\text{,YMZgvb}$  *wePbvq A+\_W*  $\text{c} \times \text{uZ}$  *AMvKvi cÜc`* |

**mini 7.** *weU19* I *Uwf1* Gi *DcthvMx cÜZcÜvj xi Zxbv*

<i>tKvb</i>	<i>1g AMvKvi</i> (1st preference)	<i>2g AMvKvi</i> (2nd preference)
<i>weU19</i>	<i>A+_W</i> .	<i>mmUim</i>
<i>Uwf1</i>	<i>mmUim</i>	<i>A+_W</i> .

## Dc̣ḥẉṂx̣ Aveṿị Gj̣ṿḲṿ

tḥṇZẓṭḲṿḅỤ ṃṣ̌ṭḥ RḅḲ Liṿ c̣ḥẒṭivạ ̣ŋ̣g̣Ẓṃ=̣ụ́ḅẹ ẒṿḄ P̣ṿ Aveṿ` Dc̣ḥẉṂx̣ mẹ Gj̣ṿḲṿq̣ G̣ụỤ Aveṿ`tḥẉṂ`| ṭḲṿḅỤị Aveṿṭ`ị Rḅ`ụJ̣vị Mig̣ Ị ṾṿỤ̊ṿ X̣ṿj̣ Geṣ mg̣Ẓj̣ Gj̣ṿḲṿỊ Dc̣ḥẉṂx̣ ṇṭẹ|

## ̣ẉeg̣ṿỵ Geṣ ̣ẉẹẒịỴ

eṿṣj̣ṿṭ`ḳ P̣ṿ ṂṭeḷỴṿ Ḅḅẉ÷̣ụḌṭỤị ṂṭeḷỴṿ Dc̣-̣Ḳụg̣ụỤị ṃ`ṃ`ẹ,̣ MẒ 03-11-2015̣ ụḶ.̣ Ḅḅẉ÷̣ụḌṭỤị Aḅỵp̣Ẓ 71Ẓg̣ ṃf̣ṿq̣ G/17/7̣ ṃṣ̌ṭḲẒḥỵ ṭḲṿḅỤị g̣ṿṾ cḥṭq̣ị Drc̣ṿ`ḅ,̣ ̣ỵṂẒg̣ṿḅ,̣ ḅṿṃṭịṭẒ `ẹẉḳọ́` Geṣ Aḅ`ṿḅ` ̣ẉ`Ḳ cḥṭj̣ṿP̣ḅṿ Ḳṭị ṭḲṿḅỤ P̣ṿ ̣ẉḳṭị`ị Rḅ`̣ẉeg̣ṿỵ`ị ̣ẉṃx̣ṿṣ̌ṭ ṂḥỴ Ị Aḅṭg̣ṿ`ḅ Ḳṭịḅ|̣ ṭṃ c̣ẉịṭc̣ḥṭẒ G/17/7̣ ṃṣ̌ṭḲẒḥỵ ṭḲṿḅỤị G̣Ḷḅ ̣ẉẹụ19̣ ḅṿṭg̣ ṃṿg̣ụq̣Ḳ Aeg̣ṿỵ ṭṆṿỊỴṿ Ḳiṿ ḥṿṭ`Q̣|̣ ṭḳKoḥỵ c̣ḥẒụ P̣ṛiṿị g̣j̣` 20.00̣ ỤṿḲṿ aṿḥ`Ḳiṿ ṇṭq̣ṭQ̣|̣ ẠẉẒ ḳx̣ṆḄ G̣ ṭḲṿḅỤị P̣ṛiṿ ̣ẉẹẒịỴ Ḳiṿ ṇṭẹ|̣ ̣ẉḅḌẉḲẹq̣ṃ ṭḲṿḅ c̣ḥṭ ṃP̣ḅṿḲṭị c̣ḥṭ ̣ẉg̣Ḳf̣ṿṭẹ c̣ḥẒụ eṿṂṿḅṭḲ ṃṭẹP̣P̣ `ḳụỤ Ḳṭị P̣ṛiṿ ṃiẹiṿṇ Ḳiṿ ṇṭẹ|̣ P̣ṛiṿ ṃṣṂḥḲṿṭj̣ g̣j̣` ḅṂṭ` eṿ c̣ẉị P̣ṿj̣ Ḳ,̣ ̣ẉẹụẠṿị ẠṿḄ ẹiṿẹṭị ṭP̣Ḳ/ẈṭḍỤ g̣ṿạ`ṭg̣ c̣ẉị ṭḳṿạ Ḳiṿ ḥṿṭẹ|

(W. g̣ṿḄḅḌẉị`ḅ Ạṿṭg̣`)  
c̣ẉị P̣ṿj̣ Ḳ

(ṭg̣ṿṭ Ḅṃg̣ṿḄj̣ ṭṇṿṭṃḅ)  
c̣ḥṿḅ `ẹẠṿḅḲ Ḳg̣ṚẒP̣  
Ḍẉị`c̣ ̣ẉẹẠṿḅ ̣ẉẹf̣ṿṂ

# **Bangladesh Tea Research Institute**

Srimangal-3210, Moulvibazar

Circular No. 139

Date: 23 September 2016

## **RELEASE OF CLONE BT19**

### **Introduction**

A group of plants raised vegetatively from a single plant is called clone and the method of propagation is called clonal propagation. Clonal selection method is a useful and very common method of developing improved planting materials of tea in all tea growing countries. Clones are playing a significant role in improving yield and quality of Bangladesh tea. In order to improve yield and quality of Bangladesh tea, Bangladesh Tea Research Institute has been trying to transfuse the industry with improved planting materials. As an outcome of the selection and hybridization works of Botany division, Bangladesh Tea Research Institute so far released 18 improved clones for the tea industry in three categories such as standard, yield and quality clones. With the continuation of clonal development process, BTRI has now announces the release of another improved standard Clone in the name BT19 in its released series of vegetative clones. The accession number of this clone during selection and trial period was A/17/7.

### **Source and selection of BT19**

The clone BT19 was originally selected from Section 17 of Amo Tea Estate of Duncan Brothers (Bangladesh) Limited. The tea estate is situated at drought prone area of Luskerpore Valley. Clonal selection work was initiated in this section during 1993 under the “selection programme” of the Division. The particular bush A/17/7 was selected on 26.07.1993 and data were recorded for preliminary selection. .

After rooting trial in the nursery the selected bush, namely A/17/7 along with three other test clones were put to long term yield and quality trial during 1996 at BTRI Farm. The experiment was laid out in a 5 × 5 Latin Square Design with 105cm × 60cm spacing. Tocklai released 1<sup>st</sup> clone TV1 was used as a standard for yield and quality comparison. The test clone coded as A/17/7 appeared quite potential in respect of yield, quality, nursery rooting, drought tolerance and other field performances.

### **Morphological characteristics of BT19**

Morphologically, the plant falls under light-leaved Assam agrotype. The clone has heavy girth with quite satisfactory spread and profuse branching. The plant has medium bush with semi-orthotropic growth habit. The growth and response of new flush is very well after pruning. Leaves are light green, medium-slightly broad in size, glossy and smooth with semi-erect leaf pose. Leaf apex is prominent with uniformly serrated margin. The plucking shoots are soft, medium sized, dense and evenly distributed on the plucking table.

**Table-1.** Comparative study of morphological characteristics of BT19 and TV1

Serial No.	Characteristics	A/17/7 (Test clone)	TV1 (Control)
1.	100 fresh shoot weight (g) (2L+B)	96.50	77.5
2.	Shoot dry matter (%)	22.75	17.10
3.	Shoot length (cm)- (2L+B)	8.15	6.35
4.	Mature leaf area (cm <sup>2</sup> )	45	36.50
5.	Leaf lamina length (cm)	12.50	11.69
6.	Leaf lamina breadth (cm)	5.30	4.50
7.	No. of bullation/leaf	13.75	12.10
8.	No. of serration/leaf	82.60	81
9.	No. of pruning sticks/bush at FFP	18.50	15.10
10.	Wt(kg) of pruning litter/bush at FFP	1.30	1.10
11.	Number of Plucking point /bush/year	455	395
12.	Pubescence (4 ×10x)	1520	1580

### Nursery performance

The clone BT19 strikes very well in the nursery. The clone exhibits uniform and vigorous growth in the nursery.

**Table-2.** Comparative study of nursery performance of BT19 and TV1

Accession number of the clone	Rooting ability of clone
A/17/7 (Test clone)	90-95%
TV1 (Control)	75-80%

Rooting ability: Very good = >90%, Good= >75-<90%, Medium= <75%

### Yield performance

The comparative yield performance of the clone BT19 and control TV1 is shown in Table-3 and Table-4. According to Table-3, in the experimental plot average yield at immature stage (1<sup>st</sup> -5<sup>th</sup> year) was recorded to be 1559 kg (excluding 1<sup>st</sup> year yield) compared to 1625 kg for the control TV1. Whereas, the average yield of BT19 was 1300 kg (including the 1<sup>st</sup> year yield) made tea per hectare compared to 1341 kg for the control TV1.

At mature stage, twelve year's average (6<sup>th</sup> – 17<sup>th</sup> year) yield of the clone was 3877 kg /ha compared to 3281 kg for the control. In the 13<sup>th</sup> year after planting the yield of the clone BT19 was recorded to be 4860 kg made tea per hectare. This was the highest yield so far for the clone BT19 in the trial field. The highest yield of the test clone TV1 was recorded to be 3988 kg made tea per hectare at the 13<sup>th</sup> year after planting. Though the average yield of BT19 was lower than that of control at immature stage, but 18% higher yield was observed of an average of 12 years' yield at the maturity.

**Table-3.** Comparative yield of BT19 and control TV1 (Made tea kg/ha) at immature stage (1<sup>st</sup> – 5<sup>th</sup> year)

Clone	Immature(1 <sup>st</sup> -5 <sup>th</sup> year)					Average
	1 <sup>st</sup> De-centering	2 <sup>nd</sup> Pruned	3 <sup>rd</sup> * Skiff	4 <sup>th</sup> FFP Pruning	5 <sup>th</sup> Skiff	
A/17/7 (Test clone)	265	704	1057	1570	2903	1300/1559**
TV1 (Control)	225	636	1168	1701	2976	1341/1625**

\* Drought year, \*\* Including/Excluding of 1<sup>st</sup> year yield.

**Table-4.** Comparative yield of BT19 and control TV1 (Made tea kg/ha) at mature stage (6<sup>th</sup> – 17<sup>th</sup> year)

Clone	Mature (6 <sup>th</sup> – 17 <sup>th</sup> year)											
	6th LP	7th DSK	8th MS K	9th LSK	10th LP	11th DSK	12th MS K	13th LSK	14th LP	15th DSK	16th MS K	17th LSK
A/17/7	2564	3547	4147	4273	2773	3685	4453	4860	3904	3943	3814	4556
TV1	2404	2893	3389	3852	1739	2828	4274	3988	3191	3365	3465	3979

**Table-5.** Comparative yield of 3 pruning cycles of BT19 and control TV1 (Made tea kg/ha) at mature stage (6<sup>th</sup> – 17<sup>th</sup> year)

	Yield of 3 pruning cycle at 12 years				Average	Quality
	LP	DSK	MSK	LSK		
A/17/7	3081	3725	4138	4563	3877	AA
TV1	2445	3029	3709	3940	3281	E

## Quality performance

BT19 possesses a satisfactory standard of liquor quality. It gives bright infusion. It also gives coloury liquor with useful strength and briskness. It's creaming down quality is also good. The quality of BT19 can be categorized as 'Above average' (having 32 to less than 34 quality score out of 50 is considered as above average quality). Professional tea tasters' comments are also in agreement with the above conclusion.

## Clonal category

On the basis of yield and quality performances the clone BT19 can be categorized as a Standard clone. The clone having above average yield and quality i.e. >3000-4000 kg made tea per hectare and 32 to less than 34 quality score out of 50 is considered as standard clone.

## Tolerance of drought:

The clone is quite strong and hardy. It has been observed to be highly tolerant to drought.

**Table-6.** Physiological condition at drought stress of BT19 and TV1

Serial No.	Characteristics	A/17/7 (Test clone)	TV1 (Control)
1.	Avrg. depth of root at 3 <sup>rd</sup> year (cm)	32	28.75
2.	Root Shoot Ratio	0.35	0.24
3.	Proline Content ( $\mu\text{mol/g fr. wt}$ )	0.61	0.55
4.	Leaf Water Potential (LWP*-bar)	9.50	10.30
5.	Total Chlorophyll ( $\text{mg g}^{-1}$ )	2.05	1.95
6.	Chlorophyll Stability Index (CSI%)	92	88
7.	Photosynthesis ( $\mu\text{mol m}^{-2} \text{s}^{-1}$ )	9.50	8.95
8.	Transpiration ( $\text{m.mol m}^{-2} \text{s}^{-1}$ )	1.95	2.15
9.	Water Use Efficiency ( $\mu\text{mol/m mol}$ )	5.12	4.85
10.	Relative Leaf Water Content (RWC %)	74	69

\*Lower value indicates higher degree of drought tolerance.

## Tolerance of pests and diseases

It has been observed to be fairly resistant to different pests and diseases during selection and trial period.

## Manufacturing preference

The clone will be best suited to Orthodox manufacturing process.

**Table-7.** Comparative quality study of BT19 and TV1

Clone	1st preference	2nd preference
BT19	Orthodox	CTC (Crush-Tear-Curl)
TV1	CTC	Orthodox

## Planting preference

As the clone is a good tolerant to drought, it will be suitable for planting in all tea growing areas of Bangladesh at all faces of tillah slopes as well as in the flat areas.

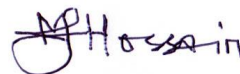
## Release and distribution

The members of the BTRI Research sub-committee in its 71<sup>st</sup> meeting held on 3<sup>rd</sup> November, 2015 critically reviewed yield, quality, nursery performances and other aspects of the clone coded as

A/17/7 and approved its release for the industry. Therefore, the clone coded as A/17/7 is now hereby released as BT19. The price of each rooted plant has been fixed at Tk. 20.00. The distribution will start very soon and initially each estate will be supplied with a maximum of ten rooted sapling to initiate their nucleus clone plot. Interested estates are therefore, requested to place their demand as soon as possible. Payment will be accepted in cash or by check/draft in favour of the Director BTRI at the time of delivery the plants.



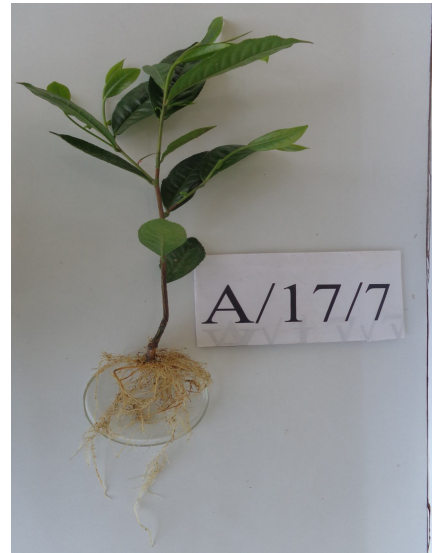
**(Dr. Mainuddin Ahmed)**  
Director



**(Md. Ismail Hossain)**  
Principal Scientific Officer  
Botany Division



newU19 (G/17/7) Gi Pri gym eqłmi tkKohŷ Pri v



newU19 (G/17/7) Gi 8 gym eqłmi tkKohŷ Pri v



bymŵi țZ tmtKŪvi x tełW newU19 (G/17/7) Gi Pri v



newU19 (G/17/7) Gi cıZı PqbZj