

**PRODUCTION TECHNOLOGY FOR IMPROVED FLAVOR BURLEY TOBACCO  
CY 2015-2016**

TECHNOLOGY COMPONENT	DETAILS					
		Bacterial Wilt	RKN	Black Shank	Fusarium Wilt	TMV/CMV
1. Variety	TN 90	S	S	MT	S	R
	CC812G	HR	S	R	MR	S
	NC 7	S	HR	R	HR	R
	KT 206	S	S	HR	S	R
	<i>Note: HR - highly resistant; R- resistant; MR- moderately resistant; MT- moderately tolerant; S- susceptible</i>					
2. Sowing Date	November 30					
3. Transplanting Cut- off Date	January 15					
4. Transplanting Method	Ridge in low lying areas; all the rest, in furrow					
5. Distance of Planting	1.0-1.1 m x 0.38- 0.45 m					
6. Number of Plants/ha	22,200 - 24,000					
7. Replanting	Within 5 days after planting (DAT)					
8. Fertilizer Rate (kg N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O/ha)	ULPI	236-108-194				
	TMI	228-108-194				
	PMFTC	176-148-169				
9. Fertilizer Source & Time and Method of Application	Quantity	Rate & Source	Method and Time			
	<b>ULPI</b>					
	12 bags	10-18-24	}	band application along planting furrows, then cover with ridge 0 DAT		
	2 bags	0-0-50				
	4 bags	46-0-0				
	6 bags	21-0-0				
	2 bags	21-0-0				
	<b>TMI</b>					
	12 bags	10-18-24	band application along planting furrows, then cover with ridge 0 DAT			
	2 bags	0-0-50	band application at 16-18 DAT			
	8 bags	21-0-0	band application at 16-18 DAT			
	8 bags	21-0-0	band application after off-barring at 28-32 DAT			

TECHNOLOGY COMPONENT	DETAILS																																																							
	<p><b>PMFTC</b></p> <p>12 bags      10-18-24      band application along planting furrows, then cover with ridge 0 DAT</p> <p>4 bags      46-0-0      band application at 15-18 DAT</p> <p>4 bags      21-0-0      band application at 25-28 DAT</p>																																																							
<p>10. Irrigation Method and Schedule</p> <p>Time of Application will follow the sidedress schedule</p>	<p>Watering</p> <p>1st at transplanting at 3 li per plant</p> <p>2nd at 5 DAT- 3 li per plant in time for re-planting</p> <p>Irrigation</p> <p><b>ULPI &amp; TMI</b></p> <p>1st at 10-18 DAT, after first fertilizer sidedress , alternate furrows</p> <p>2nd at 25-28 DAT, after the second fertilizer sidedress, alternate furrows</p> <p>3rd at 35 DAT, after third fertilizer sidedress, alternate furrows</p> <p>4th and succeeding irrigation will be as needed depending on soil moisture and weather condition. Irrigate every two weeks if harvesting is by priming; if stalk cut, irrigate 7-10 days interval before stalk cutting</p>																																																							
<p>11. Crop Protection Agents Fungicide</p>	<p><b>NOTE: THE FARMERS ARE ENCOURAGED TO APPLY CPAs ONLY AS NEEDED. To avoid CPA residues on tobacco, reduce farmers' exposure to CPAs, and, prevent insect resistance development, spray only when the insect or population is beyond ETL.</b></p> <p><b>INSECT      Economic Treshold Level (ETL)</b></p> <p>CUTWORM      5 out of 100 plants (5%) with recent cutworm</p> <p>BUDWORM      2 budworm larvae in 4 random sample groups of 10 plants each</p> <p>APHIDS      5 out 50 plants have at least 50 aphids in a leaf</p> <p>LOOPERS      Treat when 10 % or more of the plants checked are infested with live worms of any size.</p> <p>LEAF MINERS</p> <p>KATYDID      Treat when 5 katydids are seen per 50 plants.</p> <p><b>NOTE: REFER TO ANNEX "H" FOR THE SAFE USE AND MANAGEMENT OF CROP PROTECTION AGENTS (CPAs)</b></p> <table border="1"> <thead> <tr> <th>GROWTH STAGE</th> <th>ACTIVE INGREDIENT</th> <th>BRAND NAME</th> <th>TOXICITY CATEGORY</th> <th>MODE OF ACTION</th> <th>TARGET PESTS</th> <th>DOSAGE PER 16 L</th> <th>PRODUCT VOLUME</th> <th>NO. OF Sprayings</th> <th>Maximum Tankload/(L for seedbed) per ha</th> <th>PRE-HARVEST INTERVAL (days)</th> <th>RE-ENTRY PERIOD (hours)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Seedling</td> <td>Propamocarb HCl</td> <td>Proplant, Previcur-</td> <td>IV</td> <td>systemic</td> <td>Pythium spp</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="2">Acephate</td> <td>Blackhawk</td> <td>III</td> <td>contact, systemic,</td> <td></td> <td>30ml</td> <td>57ml</td> <td></td> <td>1-2 liter/10</td> <td></td> <td>24</td> </tr> <tr> <td>Compete 75 SP</td> <td></td> <td>systemic</td> <td>cutworm</td> <td>20g</td> <td>37.5g</td> <td></td> <td>sqm bed</td> <td>3</td> <td>24</td> </tr> </tbody> </table>											GROWTH STAGE	ACTIVE INGREDIENT	BRAND NAME	TOXICITY CATEGORY	MODE OF ACTION	TARGET PESTS	DOSAGE PER 16 L	PRODUCT VOLUME	NO. OF Sprayings	Maximum Tankload/(L for seedbed) per ha	PRE-HARVEST INTERVAL (days)	RE-ENTRY PERIOD (hours)	Seedling	Propamocarb HCl	Proplant, Previcur-	IV	systemic	Pythium spp							Acephate	Blackhawk	III	contact, systemic,		30ml	57ml		1-2 liter/10		24	Compete 75 SP		systemic	cutworm	20g	37.5g		sqm bed	3	24
GROWTH STAGE	ACTIVE INGREDIENT	BRAND NAME	TOXICITY CATEGORY	MODE OF ACTION	TARGET PESTS	DOSAGE PER 16 L	PRODUCT VOLUME	NO. OF Sprayings	Maximum Tankload/(L for seedbed) per ha	PRE-HARVEST INTERVAL (days)	RE-ENTRY PERIOD (hours)																																													
Seedling	Propamocarb HCl	Proplant, Previcur-	IV	systemic	Pythium spp																																																			
	Acephate	Blackhawk	III	contact, systemic,		30ml	57ml		1-2 liter/10		24																																													
		Compete 75 SP		systemic	cutworm	20g	37.5g		sqm bed	3	24																																													

TECHNOLOGY COMPONENT	DETAILS											
	GROWTH STAGE	ACTIVE INGREDIENT	BRAND NAME	TOXICITY CATEGORY	MODE OF ACTION	TARGET PESTS	DOSAGE PER 16 L	PRODUCT VOLUME	NO. OF Sprayings	Maximum Tankload/(L for seedbed) per ha	PRE-HARVEST INTERVAL (days)	RE-ENTRY PERIOD (hours)
	<b>Vegetative (10 - 34 DAT)</b>	Acephate	Blackhawk	III	contact, systemic,	cutworm, budworm,loopers	30ml	120ml	1	4		24
			Compete 75 SP		systemic	cutworm, budworm,loopers	20g	80g	1	4	3	24
		Chlorantraniliprole	Prevathon 5 SC	IV	systemic	cutworm, budworm,loopers	25ml	140ml	1	7	3	12
	<b>Early Maturity (35 – 50 DAT)</b>	Bt + Pyridalyl	Dipel + Pleo	IV	systemic	cutworm, budworm, loopers	30g+20ml	330g+220ml	1	11		
		OR Acephate	Compete 75 SP	III	systemic	cutworm, budworm,loopers, aphids	20g	220g	1	11	3	24
			Blackhawk	III	contact, systemic, stomach	cutworm, budworm,loopers, aphids	30 ml	330 ml		11		24
		OR Flubendiamide	Fenos 480 SC	IV	systemic	cutworm, budworm	4ml	50-75ml	1	13-19	5	24
	<b>Maturity (60 DAT)</b> until the third or fourth harvest depending on insect population and crop stand	Bt + Pyridalyl	Dipel + Pleo	IV	systemic	cutworm, budworm,loopers	30g+20ml	360g+240ml	1	12		
		Indoxacarb	Steward 30 WDG	III	contact, stomach, ovicidal	cutworm, budworm,loopers, leaf miners	4g sachet	40g=10 sachet	1	10	7	12
								Total Tankloads		48-56		
<b>"TOPPING before full bloom and field sanitation are important IPM strategies that can sustainably reduce insect infestation on tobacco".</b>												
12. Topping	ULPI PMFTC	18 - 22 leaves when 30% of the total population is at button stage 18-22 leaves at early button stage										
13. Suckercide	<b>FLUMEX</b>	3 liters per ha Dilution rate: 1.25 ml Flumex to 98.75 ml water or 12.5ml/liter Apply 10-15 ml solution per plant within 24 hours after topping										
14. Harvesting/	For Stalk Cut Tobacco: Prime twice with 2-3 mature leaves at 55 and 65-70 DAT; stalk cut at 84-90 DAT.											

TECHNOLOGY COMPONENT	DETAILS																							
Priming	<p>For Priming, start at 55-60 DAT, then at 7-10 days interval thereafter.</p> <p><b>PMFTC:</b> For Stalk Cut Tobacco: Prime twice with 2-3 mature leaves at 60-70 DAT; stalk cut at 84-90 DAT. For Priming, start at 60-65 DAT, then at 7-10 days interval thereafter.</p> <p><b>Important:</b> Haul leaves/stalk immediately after harvest and unload under the shade, using cheese cloth, bamboo slats C4 carton and "silag" buri as matting material. File the leaves upright with the butt ends down; hang the stalk immediately inside the barn Sort, stick, and hang the leaves inside the curing shed within the day.</p>																							
15. Air-Curing Barn Dimension (for 0.17 ha farm)	<p>Dimension: (6 of this size is needed for 1 ha)</p> <table border="1"> <tr> <td>Floor</td> <td colspan="2">4.5 m x 20 m</td> </tr> <tr> <td>Height</td> <td colspan="2">3 m</td> </tr> <tr> <td>No of Tiers</td> <td colspan="2">1</td> </tr> <tr> <td>Distance of tier from the ground</td> <td colspan="2">1.8 m</td> </tr> <tr> <td colspan="3">For harvesting by priming</td> </tr> <tr> <td>TMI</td> <td>2 tiers</td> <td rowspan="2">} with 2 primings before stalk cutting</td> </tr> <tr> <td>ULPI</td> <td>1 tier</td> </tr> <tr> <td>PMFTC</td> <td colspan="2">4 tiers with semi-permanent shed</td> </tr> </table> <p>Barn Fixture</p> <p>Psychrometer to monitor relative humidity and temperature inside the barn/shed.</p>	Floor	4.5 m x 20 m		Height	3 m		No of Tiers	1		Distance of tier from the ground	1.8 m		For harvesting by priming			TMI	2 tiers	} with 2 primings before stalk cutting	ULPI	1 tier	PMFTC	4 tiers with semi-permanent shed	
Floor	4.5 m x 20 m																							
Height	3 m																							
No of Tiers	1																							
Distance of tier from the ground	1.8 m																							
For harvesting by priming																								
TMI	2 tiers	} with 2 primings before stalk cutting																						
ULPI	1 tier																							
PMFTC	4 tiers with semi-permanent shed																							
16. Air Curing	<p>Hang stalks at 25 cm apart for good air circulation inside the barn. Maintain 65%-70% relative humidity (RH) inside the barn particularly during yellowing to lamina drying by closing or opening its sidings : higher than 70%, open sidings; lower than 65%, close the sidings.</p>																							
17. Stripping, Sorting & Classification	<p>When midribs leaves fully dried, strip and classify according to :</p> <ul style="list-style-type: none"> <li>Leaf position</li> <li>Color</li> <li>Length</li> <li>Injury/damage</li> </ul> <p><b>NOTE: NO PREWILTING and SUNDRYING</b></p>																							

TECHNOLOGY COMPONENT	DETAILS
18. Straight Laid Open Bale (SLOB) System	<p>Size of Bale Box :</p> <p>Size varies according to the requirement of the company in relation to the size of their grading ramp but the weight should not be more than 50 kg.</p> <p>Pre classify the leaves by leaf position.</p> <p>Place 4 pieces of abaca twine inside the baling box just enough tie the leaves in the box.</p> <p>Put leaves of similar size and quality in a bale.</p> <p>Tie leaves before removing the bale box.</p> <p><b><i>REMINDER: KEEP THE MOISTURE CONTENT OF THE LEAVES AT 18% OR LESS</i></b></p>
<b>REFER TO ANNEX "I" FOR THE ELIMINATION OF NON-TOBACCO RELATED MATERIALS (NTRM)</b>	