RASHMI – A NEW HIGH YIELDING TOMATO VARIETY FOR CULTIVATION

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Tomato (*Lycopersicon esculentum* Mill.) is one of the most important solanaceous vegetables cultivated in Sri Lanka. In recent years, the production of this crop has tremendously increased due to its multifarious uses in raw, cooked and processed form (Fig 1). At present the producers and consumers are much concerned about the yield and fruit quality. Farmers are growing imported tomato F_1 hybrids and most of them are interested in the quality aspects of these fruits especially for big fruit size. However, farmers reported several problems of diseases and pests in their cultivation and high cost of seed materials. Therefore, there is an urgent need to identify promising varieties having resistance to bacterial wilt disease, high yield potential and better fruit quality characteristics for table purpose.

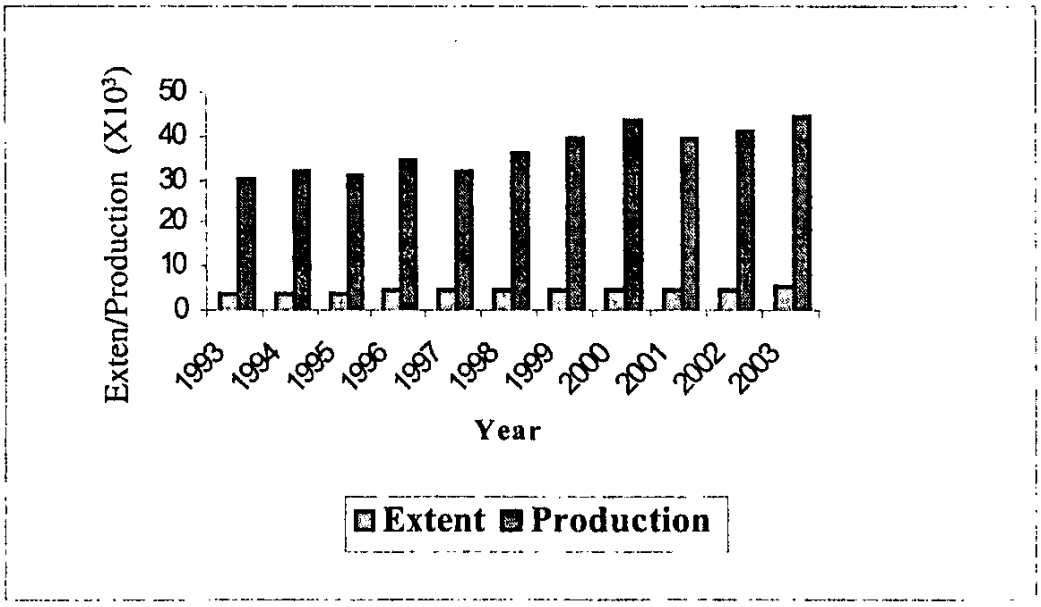

Figure 1 - Extent and Production of Tomato

A variety named Rashmi was developed at Horticultural Crop Research and Development Institute, Gannoruwa. It is a derivative of the cross between Solarset and KWR. The yield performance of Variety Rashmi is presented in Tables 1 and 2.

Table 1. The yield performance of Rashmi and T 245 in station trials, Gannoruwa.

Variety	Marketable fruit yield t/ha	
	Maha Season	Yala Season
Rashmi	25.7a	27.3a
T 245 (check)	21.3b	18.9d
LSD	2.93	2.47
CV(%)	5.8	7.1

Means followed by the same letter were not significantly different at 5% level based on DMRT

Table 2. Yield Data (t/ha) in National Coordinated varietal trials at Regional Agricultural Research and Development Center (RARDC*)

	Yield t/ha			
	RARDCs			
Variety	(a) Gannoruwa	(b) Makandura	(c) Bandarawela	(d) Girandurukotte and Mahaillupallama*
Rashmi	28.2a	23.8a	25.5a	5.8a
T-245	18.7b	16.7b	20.2b	3.7a

Means followed by the same letter were not significantly different at 5% level based on DMRT

* RARDC

(a) - Average yield of 05 seasons

(b) - Average yield of 04 Season

(c) - Average yield of 04 seasons

(d) - Average yield of 03 seasons

* Poor yields observed in the dry zone area due to poor fruit setting and flower drop.

The variety Rashmi was tested in farmer fields and its performance is presented in Table 3. Varietal adaptability tests carried out in Kandy, Kegalle, Matale and Nuwara Eliya districts indicated high adaptability and stability of Rashmi variety.

Table 3. Yield performance of Rashmi in varietal adaptability trials t/ha.

Season	Location	AEZ	T-245	Rashmi
Yala 2000	**KANDY**			
	Wewela	MCWZ	27.50	32.50
	Marassana	MCIZ	23.31	20.50
	MATALE			
	Walewela	MCIZ	9.37	8.75
	Weeragama	MCIZ	8.37	6.75
	KEGALLE			
	Beminiwatte	MCWZ	12.25	7.50
	Rambukkana	LCWZ	12.50	13.00
	N'ELIYA			
	Mungwatte	UCIZ	7.25	9.25
	Karalliyadda	MCIZ	9.50	13.75
VDM			**2.11**	**1.14**
VDV			**5.94**	**1.78**
Maha 99/00	**KANDY**			
	Godamunne	WM3	9.25	14.00
	Kundasale	IM3	15.93	9.43
	Imbuldeniya	WM2	12.77	23.50
	KEGALLE			
	Beminiwatte	WM3	12.12	8.87
	Aranayake	WM3	08.00	4.75
			4.31	**3.81**
			42.0	**5.50**
Yala 2001	**N'ELLIYA**			
	Ampitigoda	UCIZ	22.00	22.0
	Mungwatte	UCIZ	1.50	6.75
	KANDY			
	Mcgoda	MCWZ	21.30	36.6
	MATALE			
	Ellepola	MCIZ	10.50	5.62
	Dorakumbura	MCIZ	4.12	4.00
	KEGALLE			
	Ambanpitiya	MCWZ	6.00	2.50
VDM			**3.42**	**1.42**
VDV			**6.18**	**2.19**

VDM – Mean of Deviations from Maximum Response
VDV - Variance of Deviations from Maximum Response

A variety possessing the lowest VDV and VDM values is considered to be the most adaptable and stable variety. Rajitha variety had comparatively lower VDV and VDM values than T 245, clearly exhibiting its superior adaptability and stability.

Rashmi is moderately resistant to bacterial wilt disease, which is major constraint for tomato production in Sri Lanka (Table 4).

Table 4. Reaction to bacterial wilt disease

Variety	Reaction 1	Reaction 2
Rashmi	MR	MR
T 245	MR	MR
*Marglobe	S	S
** KWR	HR	HR

*	Susceptible Check variety	1	Laboratory
**	Resistant check variety	2	Field
MR	Moderately resistant	HR	Highly resistant
S	Susceptible	R	Resistant

(Evaluation was done at the pathology Division at HORDI)

The fruit quality characteristics of the Rashmi Variety in comparison with T 245 and Caribe (commercial variety) is presented in Table 5. Rashmi variety has good fruit quality characteristics like high fruit weight 185g/fruit) and firmness.

Table 5 - Quality assessments of varieties Rashmi, T 245 and Carib Commercial variety).

Character	Variety		
	Rashmi	T 245	Caribe
AV. Fruit weight (g)	185.0	72.0	180.0
Fruit Colour	Orange Red	Orange	Orange-red
Thickness (cm)	0.5	0.4	0.5
Fruit shape	Slightly Flattened	Slightly Flattened	Slightly Flattened
Firmness	Medium	Medium	Medium
Cracking	Mild	Mild	Heavy

Department of Agriculture released the variety Rashmi (Accession number HT 01) in year 2001. The seeds of this variety are now available in the Department of Agriculture. This variety is already popular in Matale district especially in Ilukkumbura, Puwakpitiya and Pitawale villages.