Research Note
J.Res. ANGRAU 40(4) 115-117, 2012

ON-FARM TESTING OF NATU TOBACCO LINE (L 45-90) IN NORTHERN LIGHT SOIL AREA OF ANDHRA PRADESH – AN ANALYSIS

K. SUMAN KALYANI and T.G.K.MURTHY
Central Tobacco Research Institute (ICAR), Rajahmundry – 533 105

Date of Receipt : 13.09.2012 Date of Acceptance : 06.11.2012

Natu tobacco is grown in West Godavari, Krishna, Guntur, Prakasam, Khammam, Kurnool, Mahaboobnagar, Nalgonda, Ananthapur, Visakhapatnam and Srikakulam districts of Andhra Pradesh for cheroot and chewing purposes. Natu tobacco has good aroma and burning quality. Soils growing natu tobacco range from heavy black-clay soils as in Guntur district to sandy and sandy loam soils of West Godavari and Srikakulam districts. Natu tobacco is grown in conserved moisture conditions, mostly as an un-irrigated crop in heavy clay soils of Guntur district. These soils are generally rich in lime. In West Godavari district, this crop is irrigated 5-8 times because of the free draining nature of the soil.This tobacco is used in the manufacture of cheaper brands of cigarettes, cheroots, chewing, pipe mixtures and snuff. It is also blended with Flue-cured Virginia tobacco (FCV) in the manufacture of several brands of cigarettes. Important Natu varieties viz., Prabhat (1977), Natu Special (1992), Pyruvithanam (2001), Bhairavi (NG73) were important natu varieties release by CTRI Research Stations. (Prasad Rao, J.A.V. 2005)

The objective of the on-farm testing is to test and evaluate the research results at farmers' fields and to refine or modify the technologies if required, for better adoption by farmers.

On Farm trials were conducted on Natu line, L 45-90 for two crop seasons, 2008-09 and 2009-10 at two locations viz., Srivarigudem and Palacherla villages in NLS zone based on purposive random sampling. Two farmers were selected from two villages by selecting 1ha for each variety thus totally 4 ha were selected, two each from two villages. All the recommended package of practices (Krishnamurhty, V., 2007) was scrupulously followed by the farmers. The line 45-90 was compared with control- Kommugudem variety.

To improve the soil physical properties, deep ploughing was done in summer with tractor/crow-bar, for conservation of soil moisture. During Kharif season, two or three ploughings and two harrowings were given. In the month of August, groundnut cake was applied and ploughed, ten days before planting for supply of nitrogen (40 kg N/ha). During the midst of October, both the Line and variety were planted at 80 cm x 80cm in one acre plot each. Farmers were supplied healthy seedlings as an input. The recommended fertilizer dose, 40kg N/ha is applied in plough furrows as ammonium sulphate or equivalent nitrogenous fertilizer, and leveled. Gap filling was done a week after planting.

After the establishment of seedlings, inter-culture with blade harrow or tyned harrow was done for 4-6 times. i.e., basal dose (40 kg DAP & 30 kg SOP /acre), First top dressing (150 kg CAN & 30 kg SOP/acre) 25 days after planting, second top dressing (150 kg $AmSo_4$ & 20 kg SOP/acre) 45 days after planting, third top dressing (Urea 90 kg/acre) 60 days after planting were applied by Dollop method. Six irrigations were given to the crop. Topping was done at 16 leaf stage. Sucker control was done by using 'Decanol (4%)'. The crop growth and cultural practices were regularly monitored.

Topping is done by removing the flower-head, keeping 14-16 leaves on the plant. Matured leaves were harvested in 4-5 primings. Natu tobacco is harvested by cutting each leaf with a small piece of stalk and strung on a jute thread with the help of a needle and cured for a period of one-and-half to two months. The leaves were strung on a jute twine with the help of long iron needles at the rate of 100-150 leaves on each string of 1.5 m to 2.5 m length. These strings were tied on bamboo poles in the open field and sun-cured. Sun-curing was completed the months of March to April in 6 weeks. All the recommended

email : sumankalyanik@yahoo.co.in

package of practices were scrupulously followed by the farmers.

After curing, the leaf is taken out, and heaped in bulks in a closed room. The bulks are turned for getting uniform texture, colour and aroma. The leaf was graded into brights, browns, darks, greens and perished leaf grades. The performance of new line, L 45-90 vs. Kommugudem was given below.

Table 1.Performance of L 45-90 under On-Farm trial at different locations in Northern Light Soil (NLS)

Location	Season	L 45-90			Kommugudem		
		Cured leaf (kg/ha)	Bright Leaf (kg/ha)	Bright Grade (%)	Cured leaf (kg/ha)	Bright Leaf (kg/ha)	Bright grade (%)
Sirivarigudem	2008-09	1920	1250	65	1640	820	50
Palacharla	2008-09	2200	1540	70	1800	1080	60
Sirivarigudem	2009-10	2100	1344	64	1750	910	52
Palacharla	2009-10	2250	1620	72	1850	1073	58

At Sirivarigudem, the line, L 45-90 recorded 1920 kg/ha cured leaf, 1250 kg/ha bright leaf with 65% bright grades in 2008-09 and in 2009-10 the cured leaf yield was 2100kg/ha, bright leaf yield was 1344 kg/ha with 64% bright grade out turn. The check variety, Kommugudem yielded 1640 kg/ha cured leaf, 820 kg/ha bright leaf with 50% bright grades in 2008-09 and in 2009-10, the cured leaf yield was 1750 kg/ha, 910 kg/ha bright leaf yield with 52 % bright grade out turn.

At Palacherla, the variety L 45-90 yielded 2200 kg/ha cured leaf, 1540 kg/ha bright leaf with 70% bright grades in 2008-09 and in 2009-10, the cured leaf yield was 2,250 kg/ha, 1620 kg/ha bright leaf with 72% bright grades. The check variety, Kommugudem yielded 1800 kg/ha cured leaf, 1080 kg/ha bright leaf with 60% bright grades and in 2009-10 the cured leaf yield was 1850 kg/ha, 1073 kg/ha bright leaf with 58% bright grade out turn. At Sirivarigudem, the line L 45-90 showed 17% (08-09) to 20 % (09-10) increase in cured leaf yield over control - Kommugudem. The line L 45-90 showed 22% increase in cured leaf over control - Kommugudem during two seasons at Palacharla.

Observations were recorded on the incidence of pests and diseases. The incidence of ground beetle and stem borer were found to be negligible in both the plots at both the locations. The incidence of

Aphids was found to be 4-6% in experimental as well as control plots at Sirivarigudem and Palacherla villages. Incidence of black shank was also noticed in both, trial and control plots. The recommended pest management practices i.e., Blitax (0.2%) for management of black shank were advocated for adoption by the farmers.

Table 2. Quality parameters of L 45-90 under On-Farm trial at different locations in NLS Zone

Irrigated Natu variety	Nicotine (%)	Reducing Sugars (%)	Chlorides (%)
Kommugudem (check)	4.73	1.35	0.84
L 45-90 (Sirivarigudem)	4.82	1.60	0.91
L 45-90 (Palacharla)	4.82	1.45	0.91

Quality parameters viz., nicotine, reducing sugars and chlorides in cured leaf were analyzed and found to be well within the desirable limits in both L 45-90 and check, Kommugudem.

Farmers were impressed with the performance of the line, L 45-90 because of its vigorous growth, more number of curable leaves and high yielding capacity than the check variety, Kommugudem. Farmers opined that the L 45-90 needs more Nitrogen due to its high yielding character. The results are useful for wider adaptability of natu tobacco line, L 45-90 in NLS region of Andhra Pradesh for improving the yield and productivity of non-FCV tobacco farmers.

REFERENCES

Prasad Rao, J.A.V. 2005. Modern Techniques of Tobacco Production. Published by Director, Central Tobacco Research Institute, ICAR, Rajahmundry. pp.1-93.

Krishnamurthy, V. 2007. Rythu Sevalo CTRI Karapatralu, Published by Director, Central Tobacco Research Institute, ICAR, Rajahmundry. pp.118-120.