

### A Note on the Bud Necrosis Disease Incidence in Rainfed Groundnut

Bud Necrosis Disease (BND) caused by Peanut Bud Necrosis Virus Tospovirus (PBNV) (Reddy *et al.*, 1996) is one of the major diseases of Groundnut occurring in both rainy and post rainy seasons with incidence ranging from 0-98 per cent (Gopal *et al.*, 1996; Thakur and Agarwal, 1996; and Delfosee, *et al.*, 1995). Temporal and spatial patterns of epidemics of BND in groundnut was reported (Cannan, *et al.*, 1995). Severe reductions in pod yield of Groundnut due to incidence of BND in early stages of growth was reported by Gopal *et al.*, (1996).

An experiment on thrips vectored PBNV incidence in rainfed groundnut in relation to the stage of its occurrence, was conducted over three rainy seasons (1989, 1990 and 1991) in Northern Dry Zone-3 (Region-II) of Karnataka. Dimethoate at 1.75 ml per litre was used to control thrips. The trial was laid out in randomised block design with three replications having plot size 3 X 4.5 m<sup>2</sup> fertilized at 25 : 50 : 25 Kg NPK/ha. There were seven treatments involving crop exposure to BND for different periods from 20 to 80 days (T<sub>1</sub> to T<sub>6</sub>) along with checks of complete protection (T<sub>0</sub>) and unprotected control (T<sub>7</sub>). Tikka leafspot and rust diseases were controlled by spraying carbendazim and mancozeb fungicides.

The data on BND incidence and pod yield was found to be significant during all the three seasons of evaluation (Table-1). Percent reduction of BND and increase of pod yield over respective controls ranged upto 86.88 and 28.05, respectively. Significantly lower and on par BND incidence was recorded in plots which received sprays immediately after germination

till harvest giving complete protection (T<sub>0</sub>) and in plots which received sprays starting from 29 days after sowing (T<sub>1</sub>) during 1989 (Table-1) where as T<sub>0</sub> alone was superior during 1990 and 1991. The plots that received sprays after 20, 35 and 50 days after sowing (T<sub>1</sub>, T<sub>2</sub> & T<sub>3</sub>) onwards till harvest have recorded lower BND incidence during all seasons of evaluation; BND incidence was on par in plots of complete protection (T<sub>0</sub>) and plot that received sprays after 29 days of exposure (T<sub>1</sub>) during 1989. Yield level was on par in plots receiving sprays 20 days onwards (T<sub>1</sub>), 35 days onwards (T<sub>2</sub>) and complete protection (T<sub>0</sub>) in all three seasons. BND incidence ranged from 1.3 to 16.1; 1.85 to 15.41 and 2.85 to 15.56 during 1989, 1990 and 1991, respectively (Table 1).

Mean pod yield over three seasons ranged from 1085 to 1508 kg/ha. Pod yield level of T<sub>1</sub>, T<sub>2</sub>, and T<sub>0</sub> was significantly higher and on par compared to control during 1989 and 1990. Pod yield ranged from 796 to 1091, 1416 to 2091 and 1042 to 1367 kg/ha during 1989, 1990 and 1991, respectively.

From the above results it can be concluded that effective control of BND with increased pod yield can be achieved by initiating protection at 20 days after sowing (T<sub>1</sub>) or even earlier (T<sub>0</sub>). Gopal *et al.* (1996) reported severe yield reduction in groundnut under early stage infection and suggested that early insecticide spray and use of resistant variety (ICGS-11 and Kadiri-3) are useful in managing BND, PI-587093 (Branch, 1996), ICGV-86325 (Dwivedi *et al.*, 1996); and ICGV-86699 (Reddy *et al.* 1996).

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Table-1. Peanut Bud Necrosis Tosopovirus Incidence in rainfed Groundnut in relation to stage of it's occurrence

Treatments	BND incidence			Mean	% reduction of BND over control	Pod yield (kg/ha)				% increase of pod yield over control
	1989	1990	1991			1989	1990	1991	Mean	
T <sub>1</sub> - 20 days	1.44	8.0	5.0	4.81	68.43	1078	2058	1358	1498	27.57
T <sub>2</sub> - 35 DAYS	3.22	7.0	9.5	6.57	56.89	1091	1999	1350	1480	26.69
T <sub>3</sub> - 50 days	6.04	9.4	13.0	9.48	37.79	859	1816	1300	1325	18.11
T <sub>4</sub> - 65 days	12.0	14.0	13.0	13.0	14.70	809	1541	1308	1219	10.99
T <sub>5</sub> - 80 days	16.10	15.0	15.6	15.56	-	846	1499	1308	1218	10.91
T <sub>6</sub> - Complete protection	1.3	1.85	2.85	2.0	86.88	1066	2091	1367	1508	28.05
T <sub>7</sub> - Control	15.30	15.41	15.0	15.24	-	796	1416	1042	1085	-
SEm*	0.60	0.28	0.7	-	-	58.82	49.9	66.7	-	-
CD (0.05%)	1.84	0.87	2.1	-	-	180.14	149.9	208.3	-	-
CV (%)	13.15	5.22	9.5	-	-	10.96	4.69	9.24	-	-

Note : T<sub>1</sub> to T<sub>5</sub> involved crop exposure to BND for respective length of time starting from sowing

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