Prospects for Extra-Short-Duration Pigeonpea in Northern Telangana Zone of Andhra Pradesh, India

C Cheralu[1], E V Ranga Reddy[1], V Muralidhar[1], A Satyanarayana[2], M V Reddy[3], Laxman Singh[3], C Johansen[3], K C Jain[3], and **N B Singh[3]** (1. Agricultural Research Station (ARS), Warangal, Andhra Pradesh, India; 2. ARS, Lam, Andhra Pradesh; 3. ICRISAT Asia Center)

Maize, groundnut, green gram, sesamum, sorghum, paddy, cotton, and medium-duration pigeonpea are the primary rainy-season crops in the Northern Telangana Zone (NTZ) of Andhra Pradesh (Table 1). The annual rainfall, coming mostly from the southwest monsoon, is 900–1150 mm. Yields of groundnut, green gram, sesamum, medium-duration pigeonpea, and sorghum are low, and farmers are anxious to get more remunerative crops. The yields of groundnut are low because of excessive vegetative growth in the rainy season and poor formation and filling of pods. Mung bean regularly suffers from preharvest sprouting because of rains at harvest time. Yields of sesamum are low because of low genetic potential of the crop, damage from rains at harvest, and diseases. Medium-duration pigeonpea suffers from terminal drought and *Helicoverpa* damage. Sorghum is less remunerative due to low prices, and damage from grain molds.

Table 1. Principal rainy-season crops of Northern Telangana Zone of Andhra Pradesh, India.

Crop	Area (10^3 ha)	Productivity (kg ha^{-1}) NTZ	AP
Mung bean	3.06	350	320
Groundnut	0.85	944	990
Sesamum	0.64	92	169
Pigeonpea (medium-duration)	0.69	205	300
Sorghum	1.63	-	605
Maize	2.50	-	1575

Source: Andhra Pradesh Department of Agriculture, and interviews with farmers.

To study potential, alternative rainy-season crops that fit into the production systems of the zone, extra-short-duration pigeonpeas (ESDP), which mature in 110–120 days, were evaluated beginning with the 1990 rainy season. Several genotypes were first evaluated at research stations and farmers' fields throughout the state of Andhra Pradesh. The results of the trials, conducted from 1990 to 1993, indicated the ESDP is more suited to NTZ (Table 2). Sufficient and well-distributed rains which end by Oct are typical of NTZ. The crop also escaped from damage by the pod borer *Helicoverpa armigera* since it flowered and podded before the pest population reaches its peak in Oct–Nov. After several genotypes were evaluated, two lines, ICPL 84031 and ICPL 88034, were selected (Table 2). ICPL 85010 has a shorter duration, and fits well into the double-cropping

Table 2. Yields (kg ha^{-1}) of extra-short-duration pigeonpea lines in Northern Telangana Zone of Andhra Pradesh, India.

	Northern Telangana Zone							
	Warangal				Jagtial			Zonal
Line	1990	1991	1992	Mean	1991	1992	Mean	Mean
ICPL 84031	1007	991	791	899	1078	1736	1407	1153
ICPL 85010	771	825	630	701	737	1446	1092	897
ICPL 86005	622	320	254	438	424	632	528	483
ICPL 87105	545	431	342	444	517	829	673	559
ICPL 88001	589	775	621	605	802	2237	1159	882
ICPL 88026	804	545	437	621	656	1296	976	799
ICPH 8	793	705	562	678	1296	1928	1612	1145
ICPL 84052	926	865	696	811	957	945	951	881
ICPL 88034	752	733	583	668	1389	1450	1420	1044
ICPL 88039	922	695	554	738	833	1099	966	852
ICPL 89016	904	750	600	752	708	1215	962	857

Prospects for Extra-Short-Duration Pigeonpea in Northern Telangana Zone of Andhra Pradesh, India

C Cheralu[1], E V Ranga Reddy[1], V Muralidhar[1], A Satyanarayana[2], M V Reddy[3], Laxman Singh[3], C Johansen[3], K C Jain[3], and **N B Singh[3]** (1. Agricultural Research Station (ARS), Warangal, Andhra Pradesh, India; 2. ARS, Lam, Andhra Pradesh; 3. ICRISAT Asia Center)

Maize, groundnut, green gram, sesamum, sorghum, paddy, cotton, and medium-duration pigeonpea are the primary rainy-season crops in the Northern Telangana Zone (NTZ) of Andhra Pradesh (Table 1). The annual rainfall, coming mostly from the southwest monsoon, is 900–1150 mm. Yields of groundnut, green gram, sesamum, medium-duration pigeonpea, and sorghum are low, and farmers are anxious to get more remunerative crops. The yields of groundnut are low because of excessive vegetative growth in the rainy season and poor formation and filling of pods. Mung bean regularly suffers from preharvest sprouting because of rains at harvest time. Yields of sesamum are low because of low genetic potential of the crop, damage from rains at harvest, and diseases. Medium-duration pigeonpea suffers from terminal drought and *Helicoverpa* damage. Sorghum is less remunerative due to low prices, and damage from grain molds.

Table 1. Principal rainy-season crops of Northern Telangana Zone of Andhra Pradesh, India.

Crop	Area (10^3 ha)	Productivity (kg ha^{-1}) NTZ	AP
Mung bean	3.06	350	320
Groundnut	0.85	944	990
Sesamum	0.64	92	169
Pigeonpea (medium-duration)	0.69	205	300
Sorghum	1.63	-	605
Maize	2.50	-	1575

Source: Andhra Pradesh Department of Agriculture, and interviews with farmers.

To study potential, alternative rainy-season crops that fit into the production systems of the zone, extra-short-duration pigeonpeas (ESDP), which mature in 110–120 days, were evaluated beginning with the 1990 rainy season. Several genotypes were first evaluated at research stations and farmers' fields throughout the state of Andhra Pradesh. The results of the trials, conducted from 1990 to 1993, indicated the ESDP is more suited to NTZ (Table 2). Sufficient and well-distributed rains which end by Oct are typical of NTZ. The crop also escaped from damage by the pod borer *Helicoverpa armigera* since it flowered and podded before the pest population reaches its peak in Oct–Nov. After several genotypes were evaluated, two lines, ICPL 84031 and ICPL 88034, were selected (Table 2). ICPL 85010 has a shorter duration, and fits well into the double-cropping

Table 2. Yields (kg ha^{-1}) of extra-short-duration pigeonpea lines in Northern Telangana Zone of Andhra Pradesh, India.

	Northern Telangana Zone							
	Warangal				Jagtial			Zonal
Line	1990	1991	1992	Mean	1991	1992	Mean	Mean
ICPL 84031	1007	991	791	899	1078	1736	1407	1153
ICPL 85010	771	825	630	701	737	1446	1092	897
ICPL 86005	622	320	254	438	424	632	528	483
ICPL 87105	545	431	342	444	517	829	673	559
ICPL 88001	589	775	621	605	802	2237	1159	882
ICPL 88026	804	545	437	621	656	1296	976	799
ICPH 8	793	705	562	678	1296	1928	1612	1145
ICPL 84052	926	865	696	811	957	945	951	881
ICPL 88034	752	733	583	668	1389	1450	1420	1044
ICPL 88039	922	695	554	738	833	1099	966	852
ICPL 89016	904	750	600	752	708	1215	962	857