Table 6. Protein content in the dehusked seeds of pigeonpea cultivars, *Atylosia* spp and their hybrids and derivatives.

Material	Generation	Mean protein (%)[a]
Cajanus cajan		
cv T-21	-	22.8
cv Pant A-2	-	24.4
cv Baigani	-	27.2
A. sericea	-	30.0
A. scarabaeoides	-	28.7
A. albicans	-	30.2
T-21 x *A. scarabaeoides*	F_6	27.8
T-21 x *A. sericea*	F_6	27.9
Pant A-2 x *A. sericea*	F_1	30.5
Pant A-2 x *A. scarabaeoides*	F_1	28.5
Pant A-2 x *A. albicans*	F_1	29.5
Baigani x *A. sericea*	F_1	33.4
Baigani x *A. scarabaeoides*	F_1	29.0
Baigani x *A. albicans*	F_1	31.3

a. Moisture-free basis (N x 6.25)

ted in Table 6 indicate that it is possible to develop cultivars with higher total protein levels through introgression of *Atylosia* genes into the cultivated pigeonpea.

We are currently engaged in selecting for high protein content as well as agronomic desirability in early generation intergeneric crosses. Attempts are being made to intermate high-protein segregates to accumulate genes for high protein in one or a few genotypes.

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Physiology/Agronomy

Field Screening of Pigeonpeas for Tolerance to Soil Salinity

At ICRISAT we have developed a simple and efficient technique by which pigeonpea lines can be screened for their alinity tolerance. In this method a tolerant and susceptible check is grown on either side of a row of the line to be tested. Long rows were used on a naturally saline Vertisol. Analysis of pooled soil samples from six places in the field showed that, in the upper 30 cm, the electrical conductivity of a 1:2 soil extract was 2.5 mmhos/cm and, in the 30-60 cm zone, 5.5 mmhos/cm.

Based on preliminary observations in the laboratory and field, checks tolerant (cv C-11) and susceptible (cv Hy-3C) to soil salinity were selected. During the rainy season of 1979 a total of 47 lines, 30 advanced lines of breeders' material, 11 cultivars and 6 species of *Atylosia*, were grown in between the tolerant and susceptible checks. These were grown in single 20-m long rows 37.5 cm apart with a within-row spacing of 10 cm. The percentage survival of test materials was scored against the immediately adjacent tolerant and susceptible checks.

The field was far from uniform in its level of salinity, but the method adopted enabled the test lines to be compared with immediately adjacent tolerant and susceptible checks. There was a good differential response, with a much lower rate of survival in the susceptible check rows than in the tolerant. The survival of most of the lines tested was intermediate between that of the tolerant and susceptible checks, but 9 out of the 47 tested lines showed better survival than the tolerant check. These better lines include four selections from ICP-7623, one each from ICP-7118, ICP-7182 and ICP-7035 plus the local cultivar ST-1 and the related genus *Atylosia scarabaeoides*.

This preliminary experiment has shown that, by using a system of alternating rows of test and check lines, screening for salinity tolerance in the field is feasible in spite of the lack of uniform salinity levels. Presently at ICRISAT, this system of alternating rows of test and check lines is being used in a replicated design and lines identified as tolerant to soil salinity will be investigated further under more controlled conditions using artificially salinized soil.

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