

ABSTRACT

Ten soybean lines of tropical and sub-tropical origin were evaluated for their adaptability to the Jamaican environment.

The characters of greatest interest measured were yield and reaction to the daylength. Observations were also made on days to flowering and maturity, seed weight and oil and protein content. Data were obtained from monthly plantings over an eighteen month period. At no time during this period was daylength long enough to prevent flowering of any of the lines. However, increasing daylength from flowering to podset appeared to have affected yield adversely. The decrease was well marked in the March to May plantings. Up to a point increasing yields were observed when daylength decreased during the pod-filling stage, e.g. July - January. Plantings in February and July gave the highest yields which are believed to be related to the phenomenon earlier discussed. In this connection, the most reactive line was No. 7 which gave a yield of 2214.3 lb/ac. from the July planting, compared with 1101.1 and 556.6 lb/ac. from the November and April plantings respectively. Line 30 was the least reactive. Compared with line 7 over similar periods, it gave yields of 1948.1, 1234.2 and 1669 lb/ac.

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The evaluation of the lines for the characters mentioned earlier facilitated the selection of four of them, viz - 27, 30, 41 and 60 for a limited study of their combining abilities. Results from F_3 generation show that the crosses 27 x 60, 60 x 30 and 41 x 30 gave significantly higher yields than the parental strains. There were indications of considerable heterosis for earliness in the hybrids, compared with their parents. Oil and protein content did not appear to vary much from parents to hybrid offspring, but the cross 41 x 60 showed a slight increase (approximately 1 per cent) in protein content when compared with the highest parent.

Although a full evaluation of the hybrids for general adaptability was not completed, results from March plantings (long days) indicate that some improvement has been achieved for this character. This is based mainly on their earlier maturity.

Further improvement is contemplated by way of double and three way crosses.

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