落花生品種改良

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摘　要：本試驗之目的係以人工雜交育種方法，結合分具於兩親本之優良農藝性狀，創育新雜交組合，進而培育雜交後代、單株選拔及品系產量比較試驗等，以期育成豐產、大粒、品質佳、抗病蟲害與適合機械化栽培之新品種，來提高本省落花生之單位面積產量，減低病蟲為害，以確保落花生之產量與品質，並降低生產成本。88年秋作進行抗莢果黑斑病、鮮莢煮食、焙炒加工等育種目標之雜交組合工作，計有TAINAN 11 × VA 221等36個組合，共計獲得464粒雜交種子。89年春作進行抗莢果黑斑病育種目標之雜交組合工作，計有TAINUNG 6 × 96F-BG等14個組合，共計獲得459粒雜交種子。歷年雜交所得之F_2～F_5世代後裔皆採用混合法進行培育，88年秋作培育131個組合，並於F_5世代混合集團內進行選拔，選獲446個優良單株。89年春作計培育140個組合，並於F_4、F_5世代混合集團內標進行選拔，選獲520個優良單株。88年秋作株行試驗選獲96F-BA-04、97S-PA-01等170個具有優良農藝特性之品系。89年春作株行試驗選獲96F-BA-04、97S-PB-50、97F-P1-54、立枝仔-46等143個具有優良農藝特性之品系。第一年品系產量比較試驗：88年秋作選獲15個優良品系，皆較對照種台南11號之莢果產量，增產1.3～13.3%，且皆具大粒莢形特性。89年春作選獲18個優良品系，皆較對照種台南11號之莢果產量增產3.1～14.1%，且皆具大粒莢形。第二年品系產量比較試驗：88年秋作選獲5個品系(94F-D-06、94F-E-09、94F-E-17、94S-C-04、94S-E-09)之平均公頃莢果與籽粒產量皆較對照種台南11號增產2.1～5.6%與0.3～6.6%，且皆具大粒莢形。89年春作選獲8個品系(94S-B-04、94S-X-06、95F-G-01、96S-BA-03、96S-BC-02、96S-BE-04、96S-BN-03、97F-P1-02)，皆較對照種台南11號之平均公頃莢果與籽粒產量，增產5.8～24.2%與6.9～26.5%，且皆具大粒莢形特性。第三年品系產量比較試驗：88年秋作選獲6個品系(91F-BJ-05、93S-BN-05、93S-BC-04、93F-BE-01、93F-BD-01、94S-Q-02)皆較對照種台南11號之平均公頃莢果、籽粒產量增產4.9～8.9%與4.6～11.3%，且皆具大粒莢形特性。89年春作選獲1個品系(93F-BD-01)較對照種台南11號之平均公頃莢果與籽粒產量，增產12.4%與9.3%，且具大粒莢形特性。區域試驗：選獲農育44號、南改系163號等3個品系較對照種台南11號之莢果產量增產3.1～12.2%，且具大粒莢形。

Improvement of Peanut Varieties

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Abstract: The peanut improvement project of Taiwan Agricultural Research Institute seeks to develop superior lines, emphasizing selection for the following characteristics: tolerance to pod rot, high-yielding, large pod and seed size, and the best quality. Hybridization was used for incorporating good characteristics from the parents. In the fall crop season of 1999. 464 hybrid seeds were obtained from 36 new cross combinations. 459 hybrid seeds were obtained from fourteen new cross combinations in the spring crop season of 2000. The bulk method was applied for propagating the hybrid progenies in the F_2-F_5 generations. Single plant selection was made at the F_5 generation and was based on the objective of breeding. At F_5 generation, 446 and 520 superior plants were selected in the fall crop season of 1999 and the spring crop season of 2000, respectively. In the plant-to-row trial, 170 and 143 elite lines were selected in the fall crop season of 1999 and the spring crop season of 2000, respectively. They were higher pod yield than the check, Tainan 11. In the preliminary yield trial (PYT), fifteen elite lines in the fall crop season of 1999 were 1.3 – 13.3 % higher in pod yield than the check, Tainan 11. The eighteen superior lines outyielded the check, Tainan 11, in the 2000 spring PYT. These lines were 3.1 – 13.3 % higher in pod yield than Tainan 11. They had large pod size. In the intermediate yield trial (IYT), five elite lines with large pod size were 2.1 – 5.6 % higher in pod yield and 0.3 – 6.6 % higher in kernel yield than the check, Tainan 11, in the fall crop season of 1999. Eight lines in the 2000 spring IYT were higher than Tainan 11 by 5.8 - 24.2 % in pod yield and 6.9 - 26.5 % in seed yield. In the advanced yield trial (AYT), there were six superior lines , 91F-BJ-05, 93S-BN-05 etc. selected in the fall crop season of 1999. These lines with large pod size outyielded the check, Tainan 11, by 4.9 – 8.9 % in pod yield and 4.6 – 11.3 % in kernel yield. One entry, 93F-BD-01, from the 2000 spring AYT were superior to Tainan 11 by 4.9 - 8.9% in pod yield and 4.6 - 11.3% in seed yield. The three best lines among the regional yield trial during the spring crop season of 1998 – 2000 significantly outyielded the check, Tainan 11, by 3.1 – 12.2 % in mean pod yield. They were large pod size.