

PLANTING DATE TRIAL OF FOUR VARIETIES
OF SWEET PEAS

by

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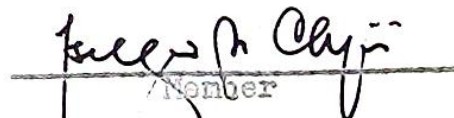
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A B S T R A C T

CHANGSUNBOON, VIVAN. Planting Date Trial of Four Varieties of Sweet Peas (Under the direction of Dr. Pedro A. Abella).

This study was conducted to determine the effect of planting dates on the performance of four varieties of sweet peas, namely: Giant, Mammoth Helting Sugar, Chinese, and Nyra Green under CILU conditions.

Experimental results, revealed significant differences among the varieties as to growth and yield. Giant, Mammoth Helting Sugar and Chinese varieties outgrew and outyielded Nyra Green. The differences, however, could be attributed to genetics. The first three varieties are considered tall, whereas the last variety is considered dwarf.

The effect of planting dates on the yield, likewise showed significant differences. Mammoth Helting Sugar variety yielded significantly better than the other varieties when planted in the month of September. On the other hand, Giant outperformed the other varieties when planted in October and December. For November and December, Chinese and Giant varieties produced significantly higher yields than Mammoth Helting Sugar and Nyra Green varieties.

November planting seems to be the most suitable time for planting peas under CILU conditions.

BIOGRAPHICAL SKETCH

VIVAT CHARNCOMBOON was born on October 28, 1946 at Sampran, Nakornpathom, Thailand. He obtained his elementary education at Bansampran School and his secondary education at Sampranvitaya School. In 1964 he pursued his studies at Maejo, Chiangmai College of Agriculture, Chiangmai, Thailand for five years.

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LITERATURE CITED

- (1) Brown, H. D. 1949. Vegetable Science. New York: J. B. Lippincott Co., Inc.
- (2) Cevallos, P. C. 1951. Tropical Horticulture. Manila: D. P. Perez Company.
- (3) Childers, N. F. 1969. Modern Fruit Science. Horticultural Publications, New Jersey. pp. 130
- (4) Chantrenimitra, N. 1970. Dates of planting of three varieties of bush beans. (Unpublished Special Problem) Central Luzon State University, Nueva Ecija.
- (5) Gardner, V. R., F. C. Bradford and H. D. Hooker. 1952. The Fundamentals of Fruit Production. New York: McGraw-Hill Book Company, Inc. pp. 99
- (6) Glori, T. F. 1967. Preliminary study on the yield performance of four varieties of peas. (Unpublished Special Problem) Central Luzon State University, Nueva Ecija.
- (7) Hawthorn, L. A. and L. W. Pollard. 1954. Vegetable and Flower Seed Production. New York: The Blackiston Company, Inc. pp. 626
- (8) Ibarria, S. A. and D. R. Rienz. 1970. The effect of temperature on the inheritance of pod numbers in Pisum sativum L. Journal of the American Society for Horticultural Science, Vol. 95, September, No. 5, pp. 740.
- (9) Knott, J. B. and J. R. Deanon. 1967. Vegetable production in South-East Asia. U.P.C.A., Laguna, Philippines, pp. 69-71.
- (10) Lee, H. C., R. W. Campbell and G. H. Paulsen. 1974. Effects of drought stress and succinic acid-2, d-Dimethylhydrazide treatment on water relation and photosynthesis in pea seedlings. Crop Science. Published by the Crop Science Society of America, Vol. 14, March-April, No. 2, pp. 279.

LITERATURE CITED

- (1) Brown, H. D. 1949. Vegetable Science. New York: J. B. Lippincott Co., Inc.
- (2) Covalles, P. C. 1951. Tropical Horticulture. Manila: D. P. Perez Company.
- (3) Childers, W. F. 1969. Modern Fruit Science. Horticultural Publications, New Jersey. pp. 130
- (4) Chantranimitra, N. 1970. Dates of planting of three varieties of bush beans. (Unpublished Special Problem) Central Luzon State University, Nueva Ecija.
- (5) Gardner, V. R., F. C. Bradford and H. D. Hooker. 1952. The Fundamentals of Fruit Production. New York: McGraw-Hill Book Company, Inc. pp. 99
- (6) Glori, T. P. 1967. Preliminary study on the yield performance of four varieties of peas. (Unpublished Special Problem) Central Luzon State University, Nueva Ecija.
- (7) Hawthorn, L. A. and L. H. Pollard. 1954. Vegetable and Flower Seed Production. New York: The Blackiston Company, Inc. pp. 626
- (8) Ibarria, B. A. and D. B. Riens. 1970. The effect of temperature on the inheritance of pod numbers in Pisum sativum L. Journal of the American Society for Horticultural Science, Vol. 95, September, No. 5, pp. 140.
- (9) Kuo, J. B. and J. R. Deanon. 1967. Vegetable production in South-East Asia. U.P.C.A., Laguna, Philippines, pp. 69-71.
- (10) Lee, H. C., R. W. Campbell and C. H. Paulsen. 1974. Effects of drought stress and succinic acid-2, d-Dimethylhydrazide treatment on water relation and photosynthesis in pea seedlings. Crop Science. Published by the Crop Science Society of America, Vol. 14, March-April, No. 2, pp. 279.

- (11) Leopold, A. C. 1964. Plant Growth and Development
McGraw-Hill Book Company, pp. 381-382.
- (12) MacMillivray, J. H. 1953. Vegetable Production.
McGraw-Hill Book Company, pp. 220-231.
- (13) McCollum, J. P. 1968. Producing Vegetable Crops
The Interstate Printers and Publishers, Inc.
Danville, Illinois, pp. 355-365.
- (14) McMillan, H. F. 1954. Tropical Planting and
Gardening. Fifth Edition. St. Martin's
Press, Inc., New York.
- (15) Oloren, J. U. 1966. Influence of planting dates
on the growth and yield of two varieties of
peas *Pisum sativum* L. (Unpublished Special
Problem) Central Luzon State University,
Bueva Ecija.
- (16) Swittle, H. and C. Bradley. 1956. The effects of
irrigation, planting and harvest dates on
yield and quality of peas. Proceedings of
the American Society for Horticultural Science.
Vol. 68, June, pp. 441.
- (17) Babanaray, A. P. and P. A. Abello. 1965. Planting
date trial of Kentucky Wonder Bean in the
Central Luzon State University. CLU Scientific
Journal. Vol. 3, No. 1.
- (18) Salisbury, E. W. 1957. The Experimental Control of
Plant Growth. Chronica Botanica Co., Waltham,
1957. pp. 345.
- (19) Wolfe, E. W. 1948. Production of Field Crops,
3rd edition. McGraw-Hill Book Co., Inc.
New York.
- (20) Lovatt, A. D. January, 1965. Environmental
Control of Plant Growth. New York: Academic
Press, pp. 269.