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
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**Assessment of Day-Neutrality Scoring Methods in Strawberry Families Grown
in Greenhouse and Field Environments**

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Abstract: A strawberry plant is considered day-neutral if it can form flower buds under both long and short day conditions; however, researchers use different methods to score day-neutrality. We studied the relationship among several different evaluation methods for day-neutrality and analyzed the possibility that greenhouse screens can be used to predict field flowering performance. The evaluation methods included: 1) flowering within 100 days from germination in a greenhouse; 2) flowering during the first summer after planting in the field; 3) flowering under both short and long days in the second year in a greenhouse; and 4) flowering under both short and long days in the second year in a field. Scoring day-neutrality within 100 days from germination was a poor predictor of field performance. However, greenhouse screens were accurate in predicting field performance, if the flowering behavior of individuals was followed through a whole season. The percentage of day-neutral progeny observed in our second year greenhouse results was highly correlated with the subsequent field evaluations, and the families with the highest flowering strength in the field also had the highest percentage of day-neutral individuals in both greenhouse and field screens. Several horticultural traits were measured in the field including runner production, crown production, flower number and fruit weight. Of these, only mean runner number in families was negatively correlated with % day-neutrality.

Key Words: Strawberry, day-neutrality, breeding, greenhouse, correlation

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