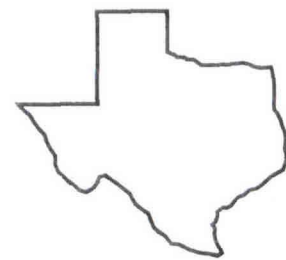
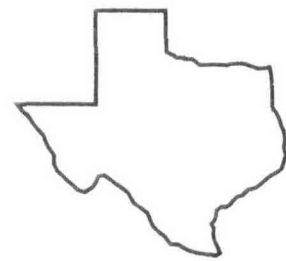
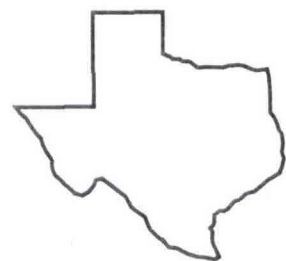
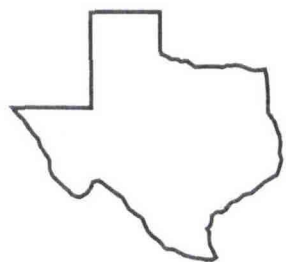
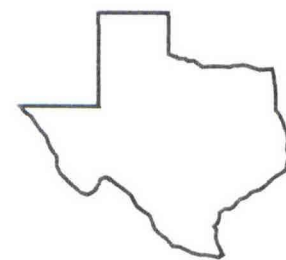




Texas Agricultural Experiment Station
Texas Agricultural Extension Service
The Texas A&M University System



Overton Field Day Report - 1994



**1994
Research Center
Technical
Report**

No. 94-1

EVALUATION OF ROSE CLOVER GERMPLASM FOR FLOWERING DATE

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Background. Rose clover is a winter annual legume that is used for pasture and soil conservation plantings in California, Australia, and Texas. Cultivars of rose clover are available that vary widely in date of flowering and winter growth habit. Kondinin and Hykon rose clover flower early in comparison to Overton R18 when grown in East Texas. Overton R18 flowers in early May and matures seed by mid-June. However, Kondinin and Hykon are less winter-dormant and more productive than Overton R18 in late winter. Kondinin and Hykon are often damaged by cold temperatures and sometimes winterkill in northeast Texas. Overton R18 is more tolerant of cold temperatures than these early cultivars and has survived winters in central Oklahoma. Rose clover cultivars are needed with long-season (Nov. through May) forage production and cold tolerance to northeast Texas winters. An experiment was conducted to determine the variation for flowering date in U. S. plant introduction collection of rose clover.

Research Findings. Fifty-six rose clover plant introductions, six breeding lines, and four cultivars were evaluated for flowering at Overton, TX in 1992-93. One hundred seed of each entry were direct-seeded 1 ft apart in row plots of 20 plants with each row 4 ft apart. Observations noted on individual plants at 4-day intervals included first elongation of stems, first bud, first flower, first color, full bloom, and mature seed. Full bloom ranged from 152 to 192 days post-planting (Fig. 1). Many rose clover lines were identified within the maturity range of 163 to 182 days post-planting to full bloom. Only eight rose clover lines were noted in this experiment that reached full bloom in less than 162 days and only three lines noted that took more than 183 days to reach full bloom.

Application. Rose clover germplasm is available with a 40-day range in date of flowering. This germplasm will be used to continue the development of improved rose clover cultivars for Texas. Crosses have been made between Overton R18 and Kondinin and between Overton R18 and Hykon. Progeny from these crosses will be evaluated for cold tolerance, winter growth, forage production, and date of flowering. Other crosses are planned between the earliest and latest rose clover germplasm identified in this experiment. Evaluation of these wide crosses will provide information on how date of flowering in rose clover can be manipulated by plant breeding.

Fig. 1. Frequency distribution of days post-planting to full bloom for rose clover germplasm.

