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Yield Comparisons of Five Strawberry Cultivars in Montana

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Abstract

Five strawberry cultivars ('Dunlap,' 'Catskill,' 'Cyclone,' 'Robinson,' and 'Sparkle') were evaluated for yield potential at Bozeman, Montana, from 1980-1982. Winter survival primarily attributed to heavy snow-cover and the use of a straw mulch was good for all cultivars. 'Dunlap' had the highest yields during all three growing seasons.

Introduction

A thriving strawberry industry in western Montana faded into virtual nonexistence during the 1950's. Renewed interest in commercial strawberry production has emerged with the advent of numerous small farms. The re-establishment of a strawberry industry in Montana was projected for Ravalli County by Schwartzman who estimated a lucrative return for locally produced strawberries (4).

Strawberries may be produced and marketed successfully in many areas of Montana. However, economic studies indicate that the following factors could limit the size of the industry: limited local fresh market potential, scarcity of harvest labor, and high labor costs (1, 2).

Selection of high yielding cultivars with consistent performance is extremely important for a successful strawberry venture. The objective of this study was to evaluate the yield of five strawberry cultivars at the Horticultural Research Farm, Bozeman, Montana.

Materials and Methods

'Dunlap,' 'Catskill,' 'Cyclone,' 'Robinson,' and 'Sparkle' were evaluated in 1980, 1981, and 1982 at Bozeman, Montana. Plantings were established on a Bozeman silt loam with high natural fertility and good water-holding capacity. The pH of surface soils was 7.8. The site was previously fallowed and no fertilizer was applied the first year. Actual nitrogen at 38 kg/ha was applied at renovation in subsequent years.

Flat-bed plantings were established in late April, 1979 in a randomized complete block design with four replications. Plots consisted of four rows 3 m long, 1.2 m wide, with plants 0.6 m apart in the row. The cultivars were grown according to conventional cultural practices (3) with a straw mulch for winter protection. Irrigation was by an overhead sprinkler system.

The two center rows of each plot were hand-harvested annually on four dates and yield data were analyzed by Newman-Keul's test (6).

Results and Discussion

Good winter survival ranged from 90 to 97% among all the cultivars and was attributed both to the use of a straw mulch and heavy snow-cover throughout the winter seasons. Dunlap was consistently higher yielding than any of the other cultivars in each year of the trial (Table 1). Cultivar yields markedly increased between 1980 and 1981. However, yields in 1982 were similar to 1981.

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Table 1. Yields of five strawberry cultivars from 1980 to 1982 at Bozeman, Montana.

Cultivar	Fruit Yield mt/ha		
	1980	1981	1982
Dunlap	6.7 a[y]	12.8 a	11.4 a
Sparkle	4.9 bc	9.9 b	10.1 b
Catskill	5.2 b	9.0 bc	9.0 c
Robinson	5.2 b	9.0 bc	9.2 c
Cyclone	4.3 c	8.5 c	9.2 c

[y]Means within a column followed by the same letter are not significantly different at the 5% level using Newman-Keul's test.

'Catskill,' 'Robinson,' and 'Cyclone' were developed for milder climatic areas than those normally encountered in Montana (5). These strawberries are higher yielding when grown under environmental conditions where they are adapted. However, yields for all the cultivars evaluated in Bozeman were relatively good considering the severe winter conditions that are encountered in Montana. These results indicate commercial potential for small-scale local strawberry production in selected areas of Montana. Yield trials involving a larger number of cultivars in conjunction with fruit quality and pest resistance evaluations are warranted.

Literature Cited

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Goonewardene, H. F., V. Rudkevich, R. Grosso, and E. B. Williams. 1986. A Computer Management System for Apple (*Malus X domestica* Borkh.) Germplasm With Resistance to Disease and Arthropod Pests. U.S. Department of Agriculture, Agricultural Research Service, ARS-53, 26 p.

This publication describes a computerized system for the storage, processing, and retrieval of available information on 2,384 entries of apple (*Malus* X *domestica* Borkh.) progenies, selections, and cultivars used in breeding for resistance to diseases and arthropods and for horticultural characteristics. The procedures that were developed for the CDC computer models 6500 and 6600 using Pascal as the high level language have been modified for use on the Apple IIe personal computer.

Copies of this publication may be purchased from the National Technical Information service, 5285 Port Royal Road, Springfield, VA 22161.