

PRELIMINARY WORK WITH MEDICINAL HERBS

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Introduction

The medicinal market in the United States is estimated at three billion dollars each year (Sturdivant and Blakley, 1999). The objective of this study was to collect information pertaining to production and quality based on environmental influences of several medicinal herbs by growing them at various locations. The following herbs were established in 1999 and harvested in their second year of production in 2000: valerian (*Valeriana officinalis*), catnip (*Nepeta cateria*), and angelica (*Angelica archangelica*). The following herbs were established in 2000 and harvested in their first year of production: calendula (*Calendula officinalis*), Echinacea (*Echinacea angustifolia*), burdock (*Actium lappa*), and *Angelica sinensis* (Dong Quai).

Materials and Methods

Valerian, catnip and angelica overwintered well and began producing growth early in the spring of 2000. Calendula, burdock, Echinacea, and Dong Quai seeds were obtained from the University of Saskatchewan, Saskatoon, and grown during the spring in the greenhouse and fertilized weekly using 15-30-15. Seven to 10 days before transplanting, plants were moved outside during the day to begin hardening. Calendula was transplanted on May 9, 2000 and burdock and echinacea were transplanted on May 25. Immediately after transplanting, plants were covered by a protective cone to provide shade during the first 2 days. Some plants did not survive the transplanting and were direct seeded and mulched. The herbs grown at Madras were arranged in 6 row plots with 3-ft row spacing and 30-ft rows. Calendula flowers were harvested from 20 ft/per plot each week after June 30, when flowers first began to appear. Flower heads were harvested in the morning, air-dried, oven-dried, and weighed. The top half of 10 catnip plants containing the flowering buds were harvested from each plot on July 31, air-dried, and weighed. All plants were mowed to 6 inches on November 3 using a rotary mower. Ten plants per replication of valerian root and angelica were removed for evaluation as well as four plants per replication of Echinacea and burdock. Roots were washed to remove soil, air-dried, oven dried, and weighed. All dry plant samples were shipped to the University of Saskatchewan for analysis of active ingredient. Analytical results for the 2000 crop are still in progress.

Results

All transplants except the dong quai survived and began immediately to put on top growth. Echinacea plants remained small but eventually began to flower on October 15. Calendula flowers were healthy and produced, on the average, 65 flowers per plot each week, considerably fewer than last year. High temperatures in August accelerated rate of flower maturity, so harvests were taken twice weekly during that period. Blister beetles damaged flower petals for a 2-week period in July. To control blister beetles, diazinon was applied to border areas following flower harvest. Valerian, angelica, and catnip produced abundant foliage and began regrowth in early spring. Average height of these plants was 65 cm during peak growth. Overall, all plants looked healthy and produced adequate foliage throughout the growing season.

Table 1. Yield of medicinal plants grown at COARC facilities in 2000. Catnip values are air-dried samples. All other plants were oven-dried after air-drying.

Herb	Dry Weight (lb/a)
Calendula	60
Catnip	1,049
<i>Echinacea angustifolia</i> root	192
Burdock root	766
Valerian root	538
<i>Angelica archangelica</i> root	727

Literature Cited

Sturdivant, L., and T. Blakley. 1999. The bootstrap guide to medicinal herbs in the garden, field, and marketplace. San Juan Naturals, Friday Harbor, WA.