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## Herb Development Program: Saskatchewan Irrigation Development Centre

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The interest in natural products and alternate health care is increasing very rapidly in North America and Europe. Presently in Western Canada, most of these herb species are grown under relatively small scale conditions or wild-crafted from natural populations.

To meet the increased demand for medicinal herbs, attempts are being made to commercialize several important herb species. With financial assistance from the Agri-Food Innovation Fund, a herb development project is being undertaken to address production, processing, and quality issues for selected herb species. This project is a collaborative effort between the Saskatchewan Irrigation Development Centre, Outlook; the Department of Agriculture and Bio-resource Engineering, University of Saskatchewan; and the Herb Development Program, University of Saskatchewan. The Saskatchewan Herb and Spice Association has identified purple cone flower (*Echinacea* spp.), milk thistle, valerian, feverfew, stinging nettle, senega root, chamomile, and yarrow for large scale production. This project examines (i) production agronomy for irrigated and dryland herbs (Saskatchewan Irrigation Development Centre), (ii) post-harvest handling (Department of Agriculture and Bio-resource Engineering), and (iii) quality attributes (Department of Horticulture Herb Development Program).

The field trials are designed develop production practices to increase yield, improve quality for both irrigated and dryland production. The main objectives of this study are:

1. Identify herb species suited for dryland and irrigated conditions.
2. Evaluate the adaptability of annual and perennial herb species for different agro-climatic regions in Saskatchewan
3. Stand establishment (direct seeding and transplanting).
4. Weed management.
5. Fertility management.
6. Reduce labour requirement.
7. Reduce winter kill.
8. Refine harvesting and post-harvest handling methods to increase product recovery and maintain quality.
9. Estimate costs of production.

Following is a summary findings from the preliminary studies in conducted during the summer of 1977:

- Direct seeding herbs was challenging because of their (i) extremely small seed, (ii) seed dormancy, and (iii) light requirement for germination.
- Good stand was obtained for all species when transplanted.
- At high seeding rates, direct seeded *Echinacea*, milk thistle, valerian produced good stands, while direct seeded feverfew and stinging nettle produced poor stands.
- Milk thistle was grown successfully and produced approximately 350 kg/ha dried seed. It is likely that this yield can be increased with improved management.
- German chamomile yielded approximately 5-6 t/ha fresh material when flowers were harvested with 2.5 cm stem