

## **Introduction**

Saskatoon cultivars have been selected on the basis of superior fruit size, taste, yield, flowering time, and color of flowers, fruit, and fall foliage. Cultivar differences such as fruit diameter and weight, acidity, sugar content, and bush yield may vary appreciably. For example, the cultivar Thiessen produces fruit considerably more acidic than fruit of the cultivar Smoky.

Currently, there are approximately 26 named cultivars of saskatoon. These include Altaglow, Bluff, Buffalo, Elizabeth, Forestburg, Honeywood, JB30, Killarney, Lee #3, Martin, Moonlake, Nelson, Northline, Paleface, Parkhill, Pearson II, Pembina, Regent, Smoky, Sturgeon, Success, and Thiessen. The cultivars, Parkhill, Regent and Success appear to be hybrids between *Amelanchier alnifolia* and *A. stolonifera*, as indicated by a recent study using genetic fingerprinting. Other cultivars of the saskatoon, and other *Amelanchier* species, are available from certain nurseries, especially in the United States. These include Beaverlodge, Gypsy, Idaho Giant, and Timm. However, these cultivars are either not widely available, or no longer available, and little or no information about their characteristics is available.

Initially, most commercial saskatoon

orchards were based on the cultivar Smoky. This was because only Smoky had been available in any quantity, and it was one of the first varieties to be released. The cultivars Honeywood, Martin, Northline, Pembina and Thiessen now have been commonly planted. These cultivars are considered to be some of the best cultivars. Other cultivars and new selections have not been planted to any great extent, partly because of the lack of comparative data on cultivar performance and potential.

At present, it is not possible to make any valid recommendations about cultivar performance at different locations, where soil type and various climatic factors differ, because properly designed cultivar comparisons are still in progress. Saskatoon cultivar evaluation trials have been established in Alberta, Saskatchewan and Manitoba, but it will be two to three more years before useful data starts to become available.

The table on the following page provides a comparison of the more popular saskatoon cultivars.

A Comparison Of Some Popular Saskatoon Cultivars					
Cultivar	Smoky	Pembina	Northline	Thiessen	Honeywood
Shrub Form	upright to spreading	upright to spreading	upright	sprawling to open, erect	upright
Mature Spread of Crown	6 m	5 m	6 m	6 m	4 m
Height	4.5 m	5 m	4 m	5 m	5 m
Flowering Time	average	average	average	early	late
Yield	very productive	productive	very productive	very productive	productive, especially at an early age
Fruit Size	14 mm	14 mm	16 mm	17 mm	16 mm
Fruit Flavour	mild, sweet	full, tangy	full, sweet	tangy, juicy	full, tangy

\*Note: these characteristics may vary considerably, depending on location and year.

## Selection Of Planting Stock For Orchards

### Characteristics Of Quality Plants

Ideally, high-quality planting stock:

- a) is true-to-variety, that is, its characteristics are identical to the named parent plant.
- b) is healthy, vigorous, not too old, 15 - 60 cm in height.
- c) has leaves with a vibrant, green color, and

stem tissues that are not soft.

- d) has a well-developed, fibrous, moist, root mass that is straight (not twisted, or wound).
- e) has uniformly spreading branches, if branched.
- f) has no signs of physical damage, or of insect pests or diseases.
- g) has graft unions that are properly healed, if grafted.

## Seedling, Cutting, Or Micro-propagated Stock?

Saskatoon plants may be derived from several different sources including seedlings (from germinated seeds), suckers, rooted cuttings, and micropropagated plantlets. The easiest, most successful methods of propagating saskatoons include the germination of seed, the use of etiolated shoots for cuttings, transplanting suckers, and micropropagation. Ease of propagation is important because it is associated with the production of higher quality planting stock.

Vegetative propagation is asexual propagation. Vegetatively propagated plants come from plant parts other than seed; these parts may include cuttings from shoots or roots, suckers, pieces of leaves, or buds. Plants derived from these parts have a single parent only and therefore are genetically identical to the parent plant. In such plants, fruit production occurs at an earlier age than in those plants propagated by germinating seed. Vegetative propagation is the method of choice for most fruit species. Micropropagated plants are not necessarily superior or inferior to plants originating from other methods of propagation. Micropropagation is possibly the best method currently available for mass propagating large quantities of saskatoons, but the technique has only been in use since 1987. To date, micropropagated saskatoons have established and grown well.

The saskatoon is a relatively unique fruit crop in that it is self-fruitful, that is, two, genetically distinct parents and cross-pollination are not required for the production of fruit and seed. The

consequence of this is that saskatoon seedlings are very similar to, or perhaps indistinguishable from the parent plant. For this reason, there is no substantial disadvantage to propagating saskatoons by seed, provided that only seed produced by the original parent clone is used (first generation, or F1, seed).

Reports differ with respect to the amount of dissimilarity in seedlings compared to the parental material. Propagators report a range of 70 to 99% similarity to the parental stock, with the seedling plants being of equal quality, more or less, to the parental stock. Because a certain amount of cross-pollination is possible, it is important to only use F1, or first generation, seed. Seed of subsequent generations will be more dissimilar to the parental stock.

For the potential grower of saskatoons, the purchase of seedlings may be a cost-effective way to establish an orchard. However, a small amount of genetic variability will be present within the orchard.

It must be noted that plant variability associated with seedlings may be useful in the search for new cultivars, especially where resistance to insect pests or diseases is expressed. Other advantages of using seed include lower initial cost and the production of disease-free material.

However, for those predisposed to the do-it-yourself approach and who wish to germinate seed, a number of factors must be considered. Seed may germinate erratically, depending on where it was collected and

how it was stored. Germinated seedlings may go dormant very quickly, and inducing them to grow to a size where they can be transplanted successfully will require appropriate cultural techniques in a greenhouse and then a nursery environment. Seedlings will require an additional year of growth before the production of a fruit crop is possible, and some roguing of mature plants that are significantly different may be necessary. Under these circumstances, it is suggested that such an approach only be used where a minimal start-up cost is essential, and where potential genetic variability is not considered detrimental (in shelterbelts, for example).

Regardless of the method of propagation, it should be noted that the quality and vigour of planting stock can vary substantially, depending upon the source. When purchasing new saskatoon plants, a potential grower first must consider the quality of the planting stock, the quantity required, the quantity available from the propagator, and the price. The method of propagation is of secondary concern. To date, saskatoon plants produced by any method of propagation appear to perform equally well, more or less, in an orchard setting.

### **What Cultivars Should A Grower Purchase?**

The productive life of a saskatoon orchard is thought to be 30 to 50 years. However, because of the ongoing development of superior, newer cultivars, it is to be expected that cultivars could become obsolete before their productive life ends.

It is important to note that recommendations for specific cultivars of most native fruit species are only tentative. Valid scientific cultivar evaluation trials are still in progress. Because cultivar recommendations are not possible at the present time, more than one cultivar, and probably a minimum of three, should be planted when establishing an orchard. An orchard comprised of several cultivars may have the following long-term advantages: a) better consistency of overall orchard yield; b) harvesting can be spread over a larger period of time because different cultivars ripen at slightly different times; c) greater overall resistance to insect pests and diseases; and d) greater adaptability for future processing possibilities.

### **Sources Of Planting Stock**

It is wise not to purchase inexpensive plants from unknown sources. Before purchasing plant material, it is important to investigate several sources before making any decisions. The cost and availability of plant material may vary considerably. The cost of purchasing high-quality planting stock may be greater, but the investment usually provides better returns in the long run.

When purchasing seed or plants, several factors must be considered. It would be useful to be able to verify that the plant material being purchased is in fact the cultivar that it is labelled as. Unfortunately, there is no easy way to verify the identification of saskatoon cultivars at present.

If the plants were grown from seed,

first generation (F1) seed should have been used. Similarly, only F1 seed should be purchased if one is starting plants from seed. It is suggested that written certification of F1 status be obtained at the time of purchase of seed or seedlings.

Plants grafted onto *Cotoneaster* rootstocks may be quite useful in avoiding loss from the woolly elm aphid. Unfortunately, such plants are more expensive, and are not as widely available. The graft union must be planted below the soil surface in order for the saskatoon to develop its own roots. Annual pruning to remove developing shoots of rootstock material will be necessary, thus requiring extra hand labor.

## Characteristics Of Saskatoon Cultivars

Most *Amelanchier* cultivars grown for fruit production belong to the species *A. alnifolia*. Similar quality fruit from selections of closely-related and naturally-hybridizing species usually are treated as saskatoons. Most saskatoon cultivars appear to be self-fertile. The cultivar descriptions in this factsheet are based on limited published data, unpublished research data, and comments by originators or their successors; scientifically acceptable, comparative data are only now becoming available. The Department of Horticulture Science, University of Saskatchewan, is the International Registration Authority for the genus *Amelanchier*.

These descriptions have been modified from the publication: St-Pierre,

R.G. 1997. Saskatoon. pp. 666-668 in *The Brooks and Olmo Register Of Fruit & Nut Varieties*. Third Edition. ASHS Press. Alexandria, Virginia.

**Altaglow.** Originated in Red Deer River valley, Alberta (51°N), and selected by A. Griffin prior to 1923; wild plant transplanted to Alberta Horticultural Research Station, Brooks. Initial selection and distribution for testing, 1928. Tested at Agriculture Canada Research Station, Beaverlodge (BRS), Alberta as Brooks White. Selected as an ornamental by J.A. Wallace, BRS, 1946. Introduced by P.D. Hargrave, Brooks, Alberta, in 1964. Fruit up to 16 mm diameter, nearly spherical, white, easily bruised (Figure 3.2); typically 5-9 per cluster, clusters tight, even ripening, very uneven in size; flavor bland but sweet. Apparently self-sterile. Shrub to 7 m high; tall and erect habit, 3 m spread at maturity; moderate to good suckering close to crown, crown expanding indefinitely; crown long-lived, 40 + years. Apparently susceptible to woolly elm aphid. Introduced as an ornamental for its habit in large landscapes, for the oddity of its white fruit, but mainly for its splendid fall foliage colors.

**Bluff.** Originated near Buffalo Lake, Sexsmith, Alberta (55°N) and selected by P. Student; wild clump discovered on his farm in 1946. Selected in 1975 by J.G.N. Davidson and K.T. (Student) Davidson; introduced in 1990. Fruit up to 13 mm diameter, nearly spherical, blue-black with light bloom; typically 7-13 cluster, cluster tight, even size, and exceptionally even ripening; good, well-balanced flavor, moderately tangy; holds its flavor when cooked better than other cultivars; seeds

relatively few and small. Shrub to 5 m high (Figure 3.4); initially upright, tends to retain tall, erect habit, 2.5 m spread at maturity unless pruned; moderate to good and close suckering near crown; crown long-lived, 50 + years. May have some resistance to leaf diseases. Currently being evaluated in a comprehensive cultivar trial.

**Buffalo.** Originated near Buffalo Lake, Sexsmith, Alberta (55°N) and selected by A. Student; wild clump discovered on his farm in 1925. Selected in 1980 from suckers transplanted in 1975 by J.G.N. Davidson and K.T. (Student) Davidson; introduced in 1990. Fruit up to 14 mm diameter, obovate to nearly spherical, blue-black with slight bloom; typically 7-13 per cluster, cluster fairly loose, fairly even ripening; excellent flavor with very good balance between tanginess and sweetness, best fresh but also cooks, cans and jams well. Shrub to 4 m high; initially upright, to spreading at maturity, 5 m spread; moderate suckering near crown, crown expands similarly to Pembina; crown long-lived, 70 + years. Currently being evaluated in a comprehensive cultivar trial.

**Elizabeth.** Originated near Langham, Saskatchewan (52°N) and selected by J. Blushke; propagated from wild plant discovered by E. Blushke (date unknown). Commercially introduced in 1991 under the name Pasture. Fruit up to 15 mm diameter, fairly even-ripening, sweet, full flavor. Shrub to 4 m high; upright to spreading; moderate suckering; consistent bearer. Currently being evaluated in a comprehensive cultivar trial.

**Forestburg.** Originated near

Forestburg, Alberta (52°30'N); wild plant discovered by A. Nixon on his farm. Transplanted to Agriculture Canada Research Station, Beaverlodge (BRS), Alberta, in 1948; tested as B.E.F. 0003. Selected by J.A. Wallace, BRS; introduced in 1963. Fruit up to 16 mm diameter, nearly spherical, blue-black with bloom; typically 7-11 cluster, clusters very tight, fairly even ripening, later than Smoky; flavor mild, quite sweet, juicy; pH 4.2. Shrub to 4 m high; initially upright to arching-spreading, 5 m spread at maturity; moderate to light suckering near crown, crown expands slowly; crown long-lived, 40 + years. Heavy producer of large fruits. Currently being evaluated in a comprehensive cultivar trial.

**Honeywood.** Originated near Parkside, Saskatchewan (53°N) and selected by A.J. Porter. Seedling selection from wild plant discovered by A.J. Porter *circa* 1955 near his Honeywood Nursery; introduced by him in 1973. Flowers 4-8 days later than other cultivars, and ripens somewhat later also. Fruit up to 16 mm diameter, basically flattened to spherical, blue-black with little bloom; typically 9-15 per cluster, cluster fairly tight, fairly even ripening; excellent full and tangy flavor; pH 3.7-3.9; seeds relatively large. Shrub to 5 m high; initially upright to arching-spreading, 4 m spread at maturity; sparse suckering near crown, crown expands relatively slowly like Pembina. May have some resistance to powdery mildew. Very productive and precociously fruitful. Currently being evaluated in a comprehensive cultivar trial.

**JB30.** Originated near Langham, Saskatchewan (52°N) and selected by J. Blushke; propagated from wild plant

discovered by J. Blushke (date unknown). Commercially introduced in 1991 under the name Quaker. Fruit up to 15 mm diameter, ripening over an extended period; good, rounded flavor. Shrub to 3.5 m high; upright to spreading; productive. Currently being evaluated in a comprehensive cultivar trial.

**Killarney.** Originated near Killarney, Manitoba (49°N) and selected by A. Eigler (date unknown); propagated from a wild plant; introduced by him in 1994(?). Good-sized fruit, pleasing taste. Shrub to 4 m high. Very productive, consistent bearer.

**Lee #3.** Originated near Barrhead, Alberta (54°N) and selected by L. Lee in 1989; cross between Pembina and Northline(?); introduced by K. Pruski, Alberta Agriculture, Crop Diversification Centre - North, Edmonton, Alberta, in 1994. Fruit up to 16 mm diameter, intense flavor and bouquet; few-seeded. Shrub to 3 m high, compact, spreads slowly.

**Martin.** Originated in Langham, Saskatchewan (52°N) and selected by D. Martin (D. Martin Nursery); introduced by D. Martin in 1990. Seedling selection from Thiessen for large fruit size and apparent, more uniform ripening, otherwise similar to Thiessen. May have partial resistance to the woolly elm aphid. Currently being evaluated in a comprehensive cultivar trial.

**Moonlake.** Originated near Saskatoon, Saskatchewan (52°N) and selected by G. Krahn (Lakeshore Tree Farms); wild plant discovered by Moon Lake; introduced by G. Krahn in 1974. Fruit up to 16 mm diameter, obovate to nearly spherical, blue-black with light bloom;

typically 6-10 per cluster, cluster open; flavor relatively mild, sweet, good; pH 3.9. Shrub to 3 m high; initially upright to arching-spreading, 3 m spread at maturity; suckering moderate. Productivity moderate, somewhat sporadic. May have some resistance to powdery mildew. Currently being evaluated in a comprehensive cultivar trial.

**Nelson.** Originated near Bradwell, Saskatchewan (52°N); wild plant discovered by S.H. Nelson in 1974; introduced by R. St-Pierre, University of Saskatchewan, Saskatoon in 1992. Flowers 3-7 days later than other cultivars. Fruit up to 13 mm diameter, nearly spherical, blue-black with little bloom, few seeds; typically 6-12 fruit per cluster, cluster compact, ripening somewhat uneven; good tangy flavor. Shrub, compact, to 1.5 m high; suckering moderate. Possibly some resistance to saskatoon-juniper rust (*Gymnosporangium spp.*). Currently being evaluated in a comprehensive cultivar trial.

**Northline.** Originated near Beaverlodge, Alberta (55°N) and selected by J.A. Wallace (Beaverlodge Nursery) in 1958; introduced by him in 1965. Fruit up to 16 mm diameter, obovate to nearly spherical, blue-black with bloom, very firm; typically 7-13 per cluster, fairly even ripening; excellent full flavor, similar in quality to Pembina, fairly sweet; pH 3.8-3.9; resistant to cracking. Shrub to 4 m high (Figure 3.3); initially upright to arching-spreading, 6 m spread at maturity; suckering quite freely near crown, crown expands indefinitely; crown long-lived, 50 + years. Possible susceptibility to woolly elm aphid. Very productive, exceeds Smoky at some

locations. Occupies an increasing proportion of commercial hectareage in Canada, the third largest in 1993. Currently being evaluated in a comprehensive cultivar trial.

**Paleface.** Introduced by W. Oaks, Miami, Manitoba (49°N) (year unknown). Large, white, mild-flavoured fruit, easily bruised. Shrub pyramidal to 2 m high; productive; suckers uncommon.

**Parkhill.** Originated in Michigan; wild plant selection; introduced by Parkhill Nursery, Bismarck, North Dakota in 1974. Species uncertain; recent genetic fingerprinting studies suggest a hybrid of *A. stolonifera* with *A. alnifolia*. Fruit up to 13 mm diameter, obovate to nearly spherical, blue-black with bloom; typically 7-11 per cluster, cluster fairly open, fairly even ripening; flavor mild and relatively bland; pH 4.1. Shrub to 1.5 m high; initially upright to spreading, 2.5 m spread at maturity; low to moderate suckering, crown expands slowly. Susceptible to powdery mildew. Possible partial resistance to *Entomosporium* leaf and berry spot. Currently being evaluated in a comprehensive cultivar trial.

**Pearson II.** Originated in Bowden, Alberta (52°N) and selected by L. Pearson; introduced by him in 1990. Open-pollinated seedling of Smoky. Fruit up to 10 mm diameter; flavor similar to Smoky. Shrub to 3 m high, consistently high production. Possible susceptibility to *Entomosporium* leaf and berry spot. Currently being evaluated in a comprehensive cultivar trial.

**Pembina.** Originated near Barrhead, Alberta (54°N) and selected by J.A. Wallace, Agriculture Canada,

Beaverlodge, Alberta; wild plant discovered in Pembina River valley *circa* 1928; tested as Barrhead No. 1 and as B.E.F. 3501; re-selected 1950; introduced in 1952. Fruit up to 14 mm diameter, obovate to nearly spherical, blue-black with bloom; typically 9-13 per cluster, fairly even ripening; excellent, full, tangy flavor, fairly sweet; pH 4.1; fruit susceptible to cracking from excessive moisture. Shrub to 5 m high; initially upright to upright-spreading, 5 m spread at maturity; moderate to sparse suckering near crown, crown expands more slowly than Smoky; crown long-lived, 70 + years. Possible susceptibility to *Entomosporium* leaf and berry spot and woolly elm aphid. Nearly as productive as Smoky. The full-flavor standard against which other cultivars are judged. Currently being evaluated in a comprehensive cultivar trial.

**Regent.** Originated near Regent, North Dakota (46°N); introduced in 1977 by J. Candrian, Farmer Seed and Nursery Co., Faribault, Minnesota. Open-pollinated seedling; species uncertain; recent genetic fingerprinting studies suggest a hybrid of *A. stolonifera* with *A. alnifolia*. Fruit up to 13 mm diameter, ovoid to nearly spherical, blue-black with bloom; typically 7-11 per cluster, cluster loose and open; flavor somewhat plum-like, mild, sweet and somewhat bland; pH 4.1-4.5; relatively few and small seeds. Shrub to 2 m high; initially upright, 2 m spread at maturity; suckering low to moderate. Precociously fruitful. Possible resistance to *Entomosporium* leaf and berry spot and saskatoon-juniper rust (*Gymnosporangium spp.*). It is also used as an ornamental, having attractive fall foliage colours. Currently being evaluated in a

comprehensive cultivar trial.

**Smoky.** Originated near Beaverlodge, Alberta (55°N), and selected by W.D. Albright; wild plant discovered on the Beaverlodge Research Station (in the Smoky River drainage basin), transplanted in 1918; tested as Selection no. 9 (1928), and B.E.F. 3502 (1935), re-selected 1950; introduced in 1952 by J.A. Wallace, Agriculture Canada, Beaverlodge, Alberta. Fruit up to 14 mm diameter, spherical, blue-black with bloom; typically 7-11 per cluster, relatively uneven ripening; good, mild flavor, sweetest cultivar with highest sugar/acid ratio so far; pH 4.1-4.5; relatively large and many seeds. Shrub to 4.5 m high; initially upright to arching-spreading, 6 m spread at maturity; freely suckering near crown, crown expands indefinitely; crown long-lived, 70 + years. Possible partial resistance to woolly elm aphid. Possible susceptibility to *Entomosporium* leaf and berry spot and *Cytospora* canker. Most productive commercial cultivar so far, yielding up to 6,000 kg/ha. The cultivar that enabled commercial production to start in the prairies; in 1990 it occupied about 85% of the hectareage in Canada. Currently being evaluated in a comprehensive cultivar trial.

**Sturgeon.** Originated on the east shore of Sturgeon Lake near Valleyview, Alberta (55°N); introduced by J.A. Wallace, Beaverlodge, Alberta, in 1971. Flavorful, large fruit in large clusters. Shrub upright to 3 m height; productive.

**Success.** Originated in Pennsylvania mountains (circa 41°N). Selection made before 1868 from seedlings of wild plants. Acquired 1873 by H.E. Van

Demam, Kansas, and introduced by him in 1878. Van Demam sold more than 10,000 plants by 1888. Species uncertain; recent genetic fingerprinting studies suggest a hybrid of *A. stolonifera* with *A. alnifolia*. Fruit up to 14 mm diameter, obovate to nearly spherical, blue-black with bloom; typically 7-11 per cluster, cluster loose, ripens slowly, fruit held firmly; flavor good but mild, somewhat apple-like, quite sweet; pH 4.0; seeds relatively large. Shrub to 2 m high; initially upright to upright-spreading, 2 m spread at maturity; moderate suckering near crown. Possible resistance to *Entomosporium* leaf and berry spot, and partial resistance to woolly elm aphid. Susceptible to powdery mildew. In one study it made the best fruit leather of 9 cultivars. Also attractive as an ornamental, having glossy, green foliage, turning an attractive red in the fall. By far the oldest surviving cultivar. Currently being evaluated in a comprehensive cultivar trial.

**Thiessen.** Originated west of Hepburn, Saskatchewan (52°N) near the North Saskatchewan River; wild plant discovered in 1906 by Maria Loewen and transplanted to her parent's farm near Debenham. Years later, removed to their farm near Langham, Saskatchewan. Obtained from this farm and introduced by G. Krahn (Lakeshore Tree Farms, Saskatoon, Saskatchewan) in 1976. Flowers a few days earlier than other cultivars. Fruit up to 17 mm diameter, nearly spherical, blue-black with slight bloom (Figure 3.1); typically 6-12 per cluster, cluster fairly loose, uneven ripening; excellent flavor, fresh and juicy. Shrub to 5 m high; initially upright, but tends to sprawl from an early age, eventually becoming a large bush, up to

6 m spread at maturity; moderate to good suckering near crown, crown expands indefinitely; crown long-lived, 70 + years. Some resistance to powdery mildew. Possible susceptibility to *Cytospora* canker and 2,4-D damage. It is much favored for U-pick orchards. It had the second largest commercial hectareage in Canada in 1993. Winner of the Canadian Society for Horticultural Science Outstanding Cultivar Award in 1994. Currently being evaluated in a comprehensive cultivar trial.

## **Saskatoon Cultivar Trials & New Cultivar Development**

### **Development And Improvement Of Saskatoon Cultivars**

The saskatoon has not been domesticated, that is, it has not undergone breeding and selection for cultivated environments. However, a number of selections having superior characteristics have been chosen from the wild, and it is this material which is being propagated and cultivated. Cultivated, or so-called tame saskatoons are still essentially wild saskatoons. Saskatoon cultivars have been selected on the basis of superior fruit size, taste, yield, flowering time, and color of flowers, fruit, and fall foliage. Cultivar differences such as fruit diameter and weight, acidity, sugar content, and bush yield may vary appreciably.

Initially, most commercial saskatoon orchards were based on the cultivar Smoky. This was because only Smoky had been available in any quantity, and it was one of the first varieties to be released. The

cultivars Honeywood, Martin, Northline, Pembina and Thiessen now have been commonly planted. These cultivars are considered to be some of the better cultivars. Other cultivars and new selections have not been planted to any great extent, partly because of the lack of comparative data on cultivar performance and potential. At present, it is not possible to make any valid recommendations about cultivar performance at different locations, where soil type and various climatic factors differ, because properly designed cultivar comparisons are still in progress.

Although superior cultivars of saskatoons exist, these existing cultivars could be improved in a variety of ways. Cultivars with increased yields, increased tolerance or resistance to insect pests or diseases, increased ease of picking, and improved fruit quality and storability would considerably enhance the commercial production of saskatoons.

### **Saskatoon Cultivar Trials**

Comprehensive saskatoon cultivar trials are in progress in Saskatchewan at five locations. The objective of these trials is to evaluate named saskatoon cultivars and additional new selections at a number of sites in the province of Saskatchewan. New, different saskatoon cultivars can only be developed if promising unnamed selections are tested against known cultivars to evaluate their potential. The scientific evaluation and comparison of saskatoon cultivars growing together at different sites has not previously been done. Data collected from this study will allow recommendations

about expected cultivar performance to be made to growers, will further the development of promising new cultivars, and will allow comparisons to be made of fruit processing potential.

### ***Cultivar Trial Design***

The saskatoon cultivar evaluation trial involves 5 sites within the province of Saskatchewan. These include 4 grower locations: a) Hudson Bay (Connie Espenant); b) Makwa (Oscar Berube); d) Saskatoon (Dan Byblow); and e) Yorkton (Martin Neuhofer). The saskatoon cultivar evaluation trial is also established at the University of Saskatchewan. These sites differ in terms of soil texture, fertility, pH, organic matter content, and local climate. Seventeen cultivars have been planted including Buffalo, Bluff, Forestburg, Honeywood, Martin, Nelson, Northline, Quaker, PAR90TRS, Parkhill, Pasture, Pearson II, Pembina, Regent, Smoky, Success, and Thiessen.

Data collection at all sites, and for all cultivars includes, where possible, post-transplant survival, mean number of suckers/plant, growth, length of the period of juvenility, bush form, flowering date, uniformity of ripening, degree of alternate bearing, degree of suckering, susceptibility to insect pests and diseases, yield/plant, number of fruit per cluster and fruit size. Fruit quality is being measured in terms of color, soluble solids content, % moisture, titratable acidity, pH, and anthocyanin content.

### ***Cultivar Trial Results To Date***

The saskatoon cultivar evaluation trial in Saskatchewan is now in its fifth year. Differences among cultivars, and site effects on cultivar performance are becoming evident. Overall, no single cultivar appears to be outstanding. Cultivar performance appears to be dependent on location. Substantial site differences are appearing for some of the characteristics measured. These differences reflect overall site effects on all plants of all saskatoon cultivars. Site effects are associated with differences in soil type, amount of rainfall and irrigation, heat units available for growth, and co-operator care and attention. For example, the Makwa site is not irrigated and suffered from extensive deer browsing prior to fruit ripening in 1996. Site also significantly affects all of the fruit quality variables measured as did cultivar. The next few years of data collection should provide important, practical information about these saskatoon cultivars and enable recommendations about performance to be made.

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## **P**late 3. Saskatoon Cultivars

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Figure 3.1: Fruit of the cultivar Thiessen.



Figure 3.2: Fruit of the cultivar Altaglow.



Figure 3.3: Four-year-old shrub of the cultivar Northline.



Figure 3.4: Four-year-old shrub of the cultivar Bluff (Photo by H. Tulloch).

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