From Forest Nursery Notes, Winter 2010

32. Propagation of Colorado natives at Little Vallye. Core, B. International Plant Propagators' Society, combined proceedings, 2008, 58:224-227. 2009.

Propagation of Colorado Natives at Little Valley©

Brian Core
Little Valley Wholesale Nursery, 13022 E. 136th Ave., Brighton, Colorado 80601 U.S.A.
Email: brian@lvwn.com

INTRODUCTION

Little Valley Wholesale Nursery was established in 1979 with 15 acres of field and container stock and a staff of four people. Over the years, it has expanded to encompass 141 acres and a peak-season staff of more than 150 people. The plant palette now includes more than 500 taxa of perennials, 275 taxa of shrubs, and over 130 taxa of trees. The area served by Little Valley's distribution system includes Wyoming, Colorado, New Mexico, and Arizona. Little Valley's motto "The Rocky Mountain Standard" expresses the commitment to be the best wholesale plant distributor in the western region. Native plants have been an important part of Little Valley's plant mix for many years.

Native plants are ideal for low-input sustainable landscapes. The Denver Metro area receives 8–15 inches of rain per year; in contrast, many eastern cities receive 50 or even 60 inches of annual precipitation. Colorado has a rapidly expanding population that threatens to deplete the water supply within a few decades. Many native plants require no supplemental water when established in the landscape; water that is not wasted on bluegrass lawns is water that can be used for human consumption. Native plants also require less frequent fertilizer and pesticide applications; overuse of fertilizer and pesticide can lead to contamination of groundwater supplies with carcinogens. The economic benefits of lower water, fertilizer, and pesticide inputs are an added enticement to use native plants.

The use of native plants in the landscape can help to emphasize a regional identity. Colorado is a state of varied landscapes; the eastern part is high plains, the central part is mountains and foothills, and the southwest part of the state is known for canyons and deserts. Colorado's wealth of showy native plants allows one to tie into the local landscape without sacrificing ornamental qualities. Mountain landscapes draw heavily on lupines, columbines, and aspens to preserve their local flavor. Succulents, chamisa, and agastache add to the beauty of the desert landscape. Swaying grasses and wildflowers like gayfeather, coneflowers, and prairie winecups offer much to the high plains landscape. Natural landscapes blend seamlessly into the surrounding environment.

COLORADO NATIVE PLANTS AND THEIR PROPAGATION

***Holodiscus dumosus*, cliff spirea.** *Holodiscus dumosus* is an upright deciduous shrub with arching branches. The pleasantly scented foliage and creamy white flowers make cliff spirea a desirable landscape plant. Flower color is variable in nature, and it may soon be possible to introduce selections with pink flowers. Its common name was derived from the fact that it frequently grows in cracks in cliffs at higher altitudes. It is hardy in U.S.D.A. Zones 2–7. Linnaeus originally classified this mountain native as a *Spiraea*, but Koch later gave the name *Holodiscus* to the group. It is commonly believed that *H. dumosus* seed must be cold/moist stratified in order to germinate, but practical experience has shown that stratification is not

necessary. Seed can be collected in October and sown in January to finish liners by early May. Overhead watering may displace the tiny seed, so it is preferable to subirrigate the seed flats. Seed begins to germinate in about 1 week. June softwood cuttings taken from nursery stock root in about 2 weeks when treated with a basal dip in 5,000 ppm IBA.

***Yucca glauca*, soapweed.** *Yucca glauca* produces a rosette of slender bluish-green bayonet-shaped leaves. It is classified as an acaulescent woody shrub. Panicles of creamy-green flowers are borne on heavy stalks up to 4 ft in height. Specimens with pink flowers have been found in nature, but have not yet been introduced to horticulture. Soapweed grows best in U.S.D.A. Zones 3–9. Native Americans made soap from the peeled root. The dehiscent seed capsules ripen in late August to early September, and seed should be collected before the capsules open. Seed is frequently poorly formed or damaged by insects. The flat, black seeds should be leached in running water for 3 days prior to sowing. No other treatment is necessary. Seed begins to germinate in about 7 days.

***Rosa woodsii*, native pink rose.** Meriwether Lewis collected the first specimen of Wood's rose on 5 Sept. 1804. This 3- to 6-ft deciduous shrub is common on the prairie, in the foothills, and in the mountains. The fragrant soft pink flowers give early summer interest, and the round, bright red fruits persist well into the winter. Birds and other wildlife savor the nutritious fruit. It is hardy in U.S.D.A. Zones 3–6. Fruit can be collected in early October; care must be taken to correctly identify the plants while collecting seed, because *Rosa woodsii*'s range overlaps with that of *R. arkansana* and *R. acicularis*. The fruit (hips) should be macerated and the pulp floated to separate it from the seed (actually achenes). Seed germinates well when cold/moist stratified for 150 days. June softwood cuttings root well when treated with a basal dip in Hormodin® 2 powder (3,000 ppm IBA).

***Mahonia repens*, Colorado creeping grape holly.** The genus *Mahonia* was named for Philadelphia horticulturist Bernard W. M'Mahon, who introduced several species to cultivation. Some have attempted to place *M. repens* in the genus *Odostemon* or *Berberis*, but *Mahonia* is the currently accepted genus. This low-growing evergreen shrub is a valuable groundcover. The bright yellow flowers provide color in late spring, the blue berries add interest in midsummer, and the red foliage is striking in late fall and winter. Songbirds are attracted to the fruit, which they devour enthusiastically. It can be found in the foothills and mountains in Colorado, and it frequently grows in partial shade. Colorado creeping grape holly grows well in U.S.D.A. Zones 3–6. Best germination is achieved by leaching seed in running water for 10 days. After leaching period is complete, surface dry seed on a blotter and treat with 400 ppm gibberellic acid for 15 min. Follow these treatments with 120–150 days of cold/moist stratification. Germination takes place over a period of about 1 month.

***Juniperus scopulorum*, Rocky Mountain juniper.** *Juniperus scopulorum* is an evergreen shrub or small tree that reach up to 30 ft in height. It grows on rocky slopes and foothills over a broad range in the western U.S.A. and Canada. Native Americans found many medicinal uses for the berries. The form and foliage color are extremely variable. Columnar, pyramidal, and spreading forms are common, and the foliage color ranges from silvery gray to bluish or green. Many excellent

cultivars have been selected, but there is still a high demand for the wild ecotype. The seed exhibits a double dormancy; it needs 90 days of warm/moist stratification followed by 90 days of cold/moist stratification. Stratification requirements can be met by sowing the seed in an outdoor seedbed in late summer or early fall. Seed germinates readily and seedlings survive transplanting well, but seedling growth is slow.

***Aquilegia coerulea*, Colorado columbine.** Dr. Edwin James discovered *Aquilegia coerulea* near Pikes Peak in 1820; it is now Colorado's state flower. This 18- to 24-inch perennial has colorful blue and white bicolor flowers and attractive blue-gray foliage. It grows well in U.S.D.A. Zones 3–8. Colorado columbine grows in wooded areas and on slopes in the mountains, and is common in aspen groves. There is natural variability in the flower color, and plant breeders have exploited this characteristic to come up with red, yellow, white, pink, and purple cultivars. Columbines hybridize freely, so seed plots for different cultivars must be separated by several hundreds of yards to ensure true-to-type seeds. Fresh seed germinates well in about 2 weeks, and does not present much of a challenge to propagators. Uniformity of germination can be enhanced by cold/moist stratifying the seed for 1 month.

***Antennaria parvifolia*, pussytoes.** *Antennaria parvifolia* is a mat-forming perennial groundcover that only reaches 1–3 inches in height. The flowers are typically white, but pale pink flowers are not uncommon in nature. The pubescent gray foliage is an attractive feature. Pussytoes grows on the prairie, in the foothills, and in the mountains up to 11,500 feet in altitude. It performs well in xeriscapes and rock gardens, but is adaptable over a broad range of conditions. The common name refers to the grayish fuzzy leaves, which resemble a cat's toe. The seed germinates well in about a week without pretreatment, but seedlings damp off easily. The pubescent foliage holds moisture, which creates an ideal environment for damping off fungi. Subirrigating the seedlings keeps the foliage dry and the plants disease-free. Cultivars such as 'McClintock's Variety' can be rooted without mist by treating the cuttings with 1,000 ppm IBA and subirrigating the plug tray to maintain soil moisture until cuttings are rooted.

***Callirhoe involucrata*, prairie winecups.** *Callirhoe involucrata* is a spreading herbaceous perennial that can reach 12 inches in height and 5 ft in width. It is only found on the eastern prairie in Colorado. The bright magenta cup-shaped flowers have earned this plant a great deal of recognition among designers, landscapers, and retail customers. It was chosen as a Plant Select® recommendation in 1999. Seed germinates poorly, largely because only 20% of seeds are viable. The seeds germinate sporadically, but scarifying the seed in hot water can increase the germination percentage and uniformity. Tip cuttings can be rooted, but stock plants rarely produce commercially viable numbers of cuttings.

***Achnatherum hymenoides*, Indian ricegrass.** *Achnatherum hymenoides* was formerly known as *Oryzopsis hymenoides*. This xeric grass is primarily found in deserts and prairies in the western U.S.A. and Canada. The fine-textured foliage reaches 18 inches in height, and the airy golden-colored inflorescence appears to float above it. Native Americans formerly ground the seeds and made gruel, dumplings, and tortillas from the flour. There is a strong demand for this attractive and

versatile plant, but it frequently frustrates propagators. The seed has a hard, impermeable seed coat, and it does not germinate well without pretreatment. A 3- to 4-min soak in 85% sulfuric acid digests the seed coat and facilitates germination. Soaking the seed in acid for longer than 5 min can erode the entire seed coat and kill the seed.

***Humulus lupulus* var. *neomexicanus*, New Mexico hops.** *Humulus lupulus* var. *neomexicanus* is a perennial vine that can climb up to 30 ft. It is most frequently found on slopes and in canyons in the mountains of Colorado. The attractive grape-like foliage is not typically as deeply lobed as its European counterpart, but the plants are otherwise very similar and may hybridize freely. The showy "cones" on the female plants add interest in late summer and early fall; the bracts from the "cones" are used in flavoring beer. The foliage can form a dense screen, and it is useful for covering unsightly chain link fences. Various Indian tribes found medicinal and ceremonial uses for this plant. The resinous seed germinates readily with 30 days of cold/moist germination. Transplanting losses are low, and seedlings and liners grow vigorously. *Humulus* is in the Cannabinaceae family

CONCLUSION

Colorado's wealth of showy native plants makes it possible to design an entirely native landscape without sacrificing ornamental qualities. The natural adaptation of these plants to their environment allows them to thrive while making the best use of our natural resources. Using native plants in low input sustainable landscapes makes economic sense in the long run because they will require less water, fertilizer, and pesticide.

LITERATURE CITED

Cutright, P.R. 1969. Lewis and Clark: Pioneering naturalists. Univ. of Illinois Press, Chicago, Illinois.

Ewan, J. 1950. Rocky Mountain naturalists: Univ. of Denver Press, Denver, Colorado.

Harrington, H.D. 1954. Manual of the plants of Colorado. Sage Books, Denver, Colorado.

Ley, A. 1943. A taxonomic revision of the genus *Holodiscus* (Rosaceae). Bul. Torr. Bot. Club 70 (3):275.

Moerman, D.E. 1998. Native American ethnobotany. Timber Press, Portland, Oregon.

USDA Forest Service. 1974. Seeds of woody plants in the United States. Agric. Hdbk .450, U.S. Govt. Printing Office, Washington, D.C.