

'Hatch' Winterfat: A Quality Shrub for Ranges and Wildlands

Richard Stevens and Stephen B. Monsen

A superior strain of winterfat called 'Hatch' was recently released for planting semiarid range and wildland sites within the Intermountain West. 'Hatch' was selected for its ability to establish, persist, and provide winter forage in the sagebrush and pinyon-juniper communities. Big game and livestock have demonstrated a preference for 'Hatch' over other accessions tested. The cultivar has excellent winter hardiness and drought tolerance. It is mostly erect, leafy, with moderately fine stems, and produces a considerable amount of seed and forage, particularly in years of heavy snow. Plants tend to be evergreen, with leaves persisting through the winter.



Three-year-old 'Hatch' winterfat over 4 ft tall.

'Hatch' is an erect half-shrub, 4-5 feet tall, that has been successfully seeded on rangelands and used to revegetate mine disturbances and depleted sites. Its rapid growth rate has made the plant useful for stabilizing, wind-blown soils and extensive barren sites caused by wildfires. The selection can be successfully seeded with other shrubs, grasses, and forbs. 'Hatch' is a high seed producer with good germination. Excellent seedling vigor contributes to its relatively good establishment. Seedlings develop rapidly, but they can be damaged by frost. Plants reach maturity quickly and under favorable conditions will produce seed the first year. It is best

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The authors recognize the efforts of A.P. Plummer, Kent R. Jorgensen, and Wendell Oaks in various phases of work leading to release of this cultivar. Monies from the Pitman-Robertson W-82-R (Job #1, #2, and #5) project for restoration of wildlife habitat helped facilitate this research. Some of the work was performed at the Snow Field Station, which is operated cooperatively by the Intermountain Station, the Utah Division of Wildlife Resources, Snow College, and Utah State University.

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adapted to areas of 12 to 16 inches average annual precipitation, but once established it will persist with as little as 8 inches.

Origin and Study Sites

A. Perry Plummer collected the original seed in 1953 from a native stand located a quarter mile northwest of the Mammoth Creek Fish Hatchery, southwest of Hatch, Utah (map).



Original collection site and areas where 'Hatch' winterfat has been planted. The circle designates the original collection site. The solid dots are the test sites.

The collection site was at an elevation of 7,270 feet within a mixed pinyon-juniper and mountain big sagebrush community. The site receives 11 to 12 inches of average annual precipitation. Soils are medium to fine textured.

Seeds from the original site have been planted at 26 locations in Utah and compared to 58 other winterfat accessions. Subsequent plantings were extended to the short and tall grass regions of the Midwest, the ponderosa pine habitat type of the Intermountain region, and the salt desert shrublands of the Southwest. In addition, plantings have been made on mine-disturbed soils in combination with other accessions. 'Hatch' has been tested in Utah, New Mexico, Nevada, Wyoming, Idaho, Colorado, Arizona, Montana, and Oregon.

In most planting sites 'Hatch' has proved equal or superior

to other accessions tested. The plants are relatively uniform in most vegetative growth characteristics, but differences in seed production have been recorded among individual plants. Important forage and seed production traits are inheritable. 'Hatch' was most competitive with broadleaf perennials and annuals. It established and persisted better than any accession when planted in Wyoming big sagebrush, basin big sagebrush, and pinyon-juniper types. 'Hatch' has the ability to establish and persist on a wide range of sites, more than any other tested accession. Plantings have not persisted well in areas that are occasionally flooded, sites with high water tables, or on soils with shallow impermeous horizons in arid salt desert shrub communities. Sources of winterfat collected from salt desert sites have survived better than 'Hatch' when planted in extremely arid sites. 'Hatch' is more adapted to upland sites than any other source tested. Preferring open, sunny exposures, it is not shade tolerant.

'Hatch' originated on a fine-textured soil but has proven to be well adapted to sandy soils. The accession is adapted to neutral and slightly alkaline sites and is particularly adapted to poorly developed mine spoils. It is not well suited to soils or sites with pH less than 6.5.

Seeding of 'Hatch'

'Hatch' can be successfully seeded. Seeds should normally be planted as whole fruits. Like other winterfat accessions, seeds of 'Hatch' are fairly difficult to process and plant. Fruits are lightweight and hairy and tend to stick together. If processed through a hammermill the seed can be damaged and will stick together or ball up. Seed processed through a barley debearder are damaged less and do not ball up or stick together. It is difficult to meter cleaned fruits through conventional drills. Agitators are needed in the seed boxes on various drills and broadcast planters to aid in seed distribution. 'Hatch' seed can be incorporated in pellets, seed tapes, or by fluid drilling or hydroseeding, or mixed with seeds of other species. Fruits should be placed on or near the soil surface and covered no more than a quarter inch. 'Hatch' can be successfully seeded by broadcasting or through a thimble type seeder. If broadcast, the surface of the soil should be harrowed or chained to lightly cover the seed.

Field and Greenhouse Plantings

Seed of 'Hatch' can be grown under cultivation. Seeded rows should be spaced 30 to 42 inches apart. Seeding rate should be about 3 pounds per acre pure live seed. Production may be greater than 300 pounds per acre (clean seed) on nonirrigated sites. Following establishment, over watering should be avoided. Plants are susceptible to Simazine, but tests have not been conducted using other herbicides to control weeds.

Seed normally ripens from late September to early October but should not be harvested until after the first killing frost. Fruits can be harvested with a combine, stripper, or beater, or be hand stripped. Seed is best prepared for seeding and storage with a barley debearder under minimum pressure and then screened over a 5/16-inch hardware cloth. Seed should be allowed to dry and then stored for 2 to 3 months to afterripen before germination is determined. Reasonable germination for filled utricles is about 80%. There are approximately 112,000 utricles per pound. Generally, a large number of utricles are not filled.

Fruits (filled and unfilled) can usually be cleaned to a purity of about 65%. Stored in an open warehouse, seeds retain good viability for about 2 years.

Seedlings are susceptible to damping-off and can be difficult to grow in a greenhouse. *Fusarium* or *Rhizoctonia* may be found in weakened plants. Field plantings usually are not affected by these fungi. Plants have not been damaged by grasshoppers which often destroy other shrubs or associated herbs.

Where Seed Can Obtained

'Hatch' was developed by Utah Division of Wildlife Resources, and Intermountain Research Station, Forest Service, and the Soil Conservation Service, U.S. Department of Agriculture. The Agricultural Experiment Station of Utah State University, the University of Idaho, and New Mexico State University participated in the release of this cultivar.

Recognized seed classes are breeder, foundation, and certified. Breeder plants are maintained at the Los Lunas Plant Materials Center, Soil Conservation Service, Los Lunas, New Mexico. Foundation seed will be produced by the Los Lunas Center.

Univ. of Idaho Has New Range Dept. Head

Kendall L. Johnson, a University of Idaho alumnus and a director of the international Society for Range Management, has been named head of the Department of Range Resources in the University of Idaho College of Forestry, Wildlife, and Range Sciences. He will assume his new position later this spring, said John C. Hendee, dean of the college.

Since 1979, Johnson, 54, has been a faculty member and extension range specialist at Utah State University, where he headed the range extension program. His responsibilities include providing technical assistance to University of Utah extension agents, developing and conducting educational programs for the public, and acting as liaison between Utah public agencies and ranchers.

Johnson replaces David A. Bryant, who resigned in June 1987, to assume the deanship of the College of Agriculture and Biological Sciences at South Dakota State University, Brookings.

Dean John Hendee said he was looking forward to Johnson's arrival. "We are extremely pleased to have attracted a proven leader, a director of the Society for Range Management, to head our Department of Range Resources. We couldn't have done any better."

Originally from Rock Springs, Wyoming, Johnson received a B.S. in range management from the University of Wyoming in 1955 and an M.S. in range management from the University of Idaho in 1957. Following his graduation from the UI, he went on to Rutgers University, and from there to Colorado State University, from which he received a Ph.D. in watershed management in 1966.

Previous to his employ at Utah State University, he worked for the U.S. Forest Service and was a faculty member of Colorado State University and the University of Wyoming.—
George Savage