



University of Idaho
College of Agriculture
Cooperative Extension Service
Agricultural Experiment Station

Current Information Series No. 318
January 1976

LIBRARY

MAY 6 1976

UNIVERSITY OF IDAHO

ALFALFA VARIETIES

Their Characteristics and Adaptability To Idaho Conditions

R. D. Ensign, Agronomist
Department of Plant and Soil Sciences

Alfalfa is a major forage crop in Idaho. When properly grown, harvested and stored, it produces more protein per acre than any other forage crop and nearly equals corn silage in total digestible nutrients for livestock. It also contributes significantly to soil-plant nitrogen supply and general soil improvement.

Variety Adaptability

More than 100 commercial alfalfa varieties are now used in the U.S. Some varieties are adapted to Idaho conditions—others are not. Many varieties are so new that their range of adaptability can only be predicted by their parentage and information from the originator.

Alfalfa varieties have been developed for certain climatic and geographic areas. Their ability to adapt to winter and summer climates is a major criterion for classification. Disease and insect resistance, use of the crop, moisture and nutritional requirements, soil type, length of growing season and seed availability are other important considerations for successful alfalfa production.

The intent of this bulletin is to familiarize Idaho farmers with the adaptability and characteristics of major alfalfa varieties in the U. S. and their potential use in Idaho.

Classification Groups

Alfalfa may be generally classified into 5 groups based upon origin, environmental adaptability and growth habits.

Very Hardy to Hardy Northern Varieties

These alfalfas have been developed to tolerate climatic conditions found above 45° latitude. The stands have long life spans and are resistant to many diseases, especially bacterial wilt which is common in these climates. These ecotypes are often called *Turkestan* and *variegated* alfalfas. The latter refers to their flower color, which ranges from purple to blue and yellow to white. In Idaho, these types are best for long hay rotations in elevations above 3800 feet.

Hardy to Moderately Hardy Mid-Continent Varieties

Generally less winter hardy than the northern types, this group is adapted to the 35° to 45° latitude of the corn-belt, the mid-Atlantic and some western states. Many of these varieties are related to alfalfas introduced from Chile into the Southwest about 1850.

Strains and varieties selected for specific geographic areas and for locations where limited seed was produced have been called *commons*. These "common" ecotypes have interregional areas of adaptation, have only moderate winter hardiness, vary in ability to maintain good stands for longer than 3 to 4 years and in resistance to insects and diseases. Many recent improved varieties—identified by dark purple flowers—have good disease resistance. New hybrids have considerable plant-type variability.

These varieties are recommended in the more moderate climates of Idaho where only short hay or pasture rotations are anticipated.

Varieties of Flemish Origin (Moderately Hardy)

These varieties have been selected from "naturalized" alfalfas in northern France and other western European countries. They usually have purple flowers, are moderately winter hardy and are quick to recover both in the spring and after each cutting. Many of the improved varieties possess excellent disease and insect resistance. They yield well from systems of frequent cuttings and short rotations. They have become popular in farming operations using alfalfa silage, green chop and dehydration.

In Idaho, these varieties are recommended for short rotation areas in central, southwest and northern parts of the state.

Hardy Creeping-Rhizomatous Pasture-Hay Varieties

This group includes varieties having horizontal underground rhizomes which emerge from stem shoots or crown buds. Many of these varieties originated and are grown in Canada but also grow in the Great Plains of the U.S. They seem to develop the creeping or spreading growth habit only under ideal moisture conditions. They will produce desirable pasture alfalfa but hay yields are usually less than with other adapted alfalfa types.

In Idaho these varieties have potential in deep irrigated and non-irrigated soils where the annual precipitation is about 14 inches.

Non-Hardy Southern Varieties

Frequently referred to as *southern*, *Peruvian*, *African* or *Indian*, these varieties are very non-hardy and non-winter dormant and are best adapted to the Southwest U.S., generally below the 35° latitude and in low altitudes. They continue to grow even under cool weather and short days in these areas. Improved varieties have insect and disease resistance for most southern areas of production, are productive forage producers and recover rapidly even under systems of 10 to 14 annual cuttings. They are not adapted to Idaho although some varieties may have potential for a biennial rotation in warmer climates and lower Idaho altitudes. Seed of these varieties is produced in the Southwest U.S.

Table 1 is a summary of most available alfalfa varieties, their origin and year and some important characteristics.

5
93
E 322

TABLE 1. ALFALFA VARIETIES IN THE UNITED STATES

Very Hardy to Hardy Northern Varieties

Name	Originator & Year	Characteristics & Uses	Name	Originator & Year	Characteristics & Uses
522	Arnold-Thomas Seed Service, 1965	Bacterial wilt resistant; growth similar to Vernal; hay type	Polar I	Northrup, King & Co., 1975	Resistant to bacterial wilt; tolerant to Phytophthora root rot; hay-silage type
525	Arnold-Thomas Seed Service, 1962	Moderate regrowth; tolerance to bacterial wilt, spotted alfalfa aphid; hay type	Progress	Caladino Farm Seeds, Inc., 1962	Wilt resistant; moderate dormancy-recovery; hay type
Agate	Minnesota Agr. Exp. Sta. & USDA, 1972	Bacterial wilt and Phytophthora root rot resistance for wet soils; dormancy (growth) like Vernal; hay type	Ramsey	Minnesota Agr. Exp. Sta. & USDA, 1972	Multi-pest resistant; slow to moderate regrowth; hay type
Algonquin	Canada Dept. Agr., Ottawa, 1973	Very hardy like Vernal; M. Media type; good seedling vigor; bacterial wilt resistant; hay type	Ranger	Nebraska Agr. Exp. Sta. & USDA, 1942	Bacterial wilt resistant; moderate regrowth; hay type
Anik	Canada Dept. Agr. Beaulieu, Alta., 1975	Yellow flower; resistant to snow mold; susceptible to wilt; one cut hay-pasture type	Scout	Farmers Forage Res., 1965	Bacterial wilt, leafspot, leafhopper resistant; moderate dormancy; hay type
Beaver	Canada Dept. Agr., Lethbridge and Saskatoon, 1961	Bacterial wilt resistant; hardy like Grimm; hay-pasture type	SX-10	The Sexauer Co., 1974	Tolerant to downy mildew and leafhopper yellowing; hay-pasture type
Bonus	Cal-West Seeds, 1971	Moderate regrowth; general disease resistance; pea aphid, spotted alfalfa aphid susceptible; hay-silage type	Teton	S. Dakota Agr. Exp. Sta., 1958	Moderate resistance to bacterial wilt, leafspot, root rot; drought tolerant; pasture type-dryland
Chimo	L. Teweles Seed Co., 1972	Moderate dormancy; bacterial wilt resistant; moderate resistance to leafspot; hay-silage type	Titan	W. R. Grace & Co., the Rudy-Patrick Seed Division, 1968	Bacterial wilt resistant; fine stems; hay type
Dawson	Nebraska Agr. Exp. Sta. & USDA, 1966	Resistant to pea and spotted alfalfa aphid, bacterial wilt; growth similar to Ranger; hay type	Trek	Canada Dept. Agr., Lethbridge, 1975	Resistant to stem nematode and bacterial wilt; irrigated hay type
Dominor	Northrup, King & Co., 1969	Resistant to bacterial wilt; hay and pasture type	Uinta	USDA & Utah Agr. Exp. Sta., 1962	Bacterial wilt, leaf blotch, mildew resistant; hay type
Fremont	Wyoming Agr. Exp. Sta., 1966	Bacterial wilt resistant; hay type	Valor	Land O'Lakes, Inc., 1974	Resistant to bacterial wilt, pea aphid; tolerant to Anthracnose, leafhopper; hay type
Grimm	Wendelin Grimm-Import, Germany, 1857	Bacterial wilt susceptible; hay type	Vernal	Wisconsin Agr. Exp. Sta. & USDA, 1953	Bacterial wilt resistant; moderate regrowth; early fall dormancy; hay type
Iroquois	Cornell (N.Y.) Agr. Exp. Sta., 1966	Fast recovery; bacterial wilt, some leaf disease resistance, popular in Northwest, hay type	Warrior	Northrup, King & Co., 1963	Moderate regrowth; bacterial wilt resistant; tolerant to common leafspot; hay-pasture type
Kayseri	Utah Agr. Exp. Sta., & USDA, 1975	Resistant to stem nematode, downy mildew, bacterial wilt and cold tolerant like Ranger; susceptible to pen and spotted alfalfa aphid; hay type	WL 202	Waterman-Loomis Co., 1962	Spotted alfalfa and pea aphid tolerant; bacterial wilt resistant; pasture-hay type
Kodiak	Asgrow Seed Co., 1973	Resistant to bacterial wilt and tolerant to leafhopper feeding and pea aphids; hay and silage type	WL 210	Waterman-Loomis Co., 1967	Pea and spotted alfalfa aphid tolerant; bacterial wilt resistant; moderate recovery; hay type
Ladak 65	Montana Agr. Exp. Sta., 1964	Bacterial wilt resistant; summer drought dormant; hay-pasture type	WL 214	Waterman Loomis Co., 1967	Bacterial wilt resistant; tolerant to pea aphid, spotted aphid; fast upright growth; hay type
Narragansett	Rhode Island Agr. Exp. Sta., 1946	Susceptible to bacterial wilt, nematode, mildew, pea and spotted aphid; tolerant to common leafspot; hay type	WL 215	Waterman-Loomis Co., 1968	Resistant to bacterial wilt; tolerant to alfalfa weevil, pea and spotted alfalfa aphid; hay type
Mark II	Cornell (N.Y.) Agr. Exp. Sta., 1965	Like Narragansett except has improved seed yield; susceptible to bacterial wilt, nematodes, downy mildew, pea and spotted alfalfa aphid; tolerant to common leafspot	WL 216	Waterman-Loomis Co., 1971	Bacterial wilt, spotted alfalfa aphid resistant; pea aphid tolerant; fall dormancy; hay type
Norseman	Barzen of Minneapolis, Inc., 1964	Bacterial wilt resistant; Ladak-type; fall-drought dormant; selected from Ladak; hay-grazing type	WL 305	Waterman-Loomis Co., 1968	Bacterial wilt resistant; downy mildew, black stem, leafhopper, pea and spotted alfalfa aphid tolerant; upright type; hay type
			WL 307	Waterman-Loomis Co., 1971	Resistant to bacterial wilt; moderately resistant to spotted alfalfa aphid; tolerant to alfalfa weevil, Phytophthora, pea aphid, southern Anthracnoses; hay type
			WL 308	Waterman-Loomis Co., 1971	Moderate fall dormancy; resistant to bacterial wilt; tolerant to pea aphid, leafhopper yellowing; hay type

Varieties of Flemish Origin (Moderately Hardy)

Name	Originator & Year	Characteristics & Uses	Name	Originator & Year	Characteristics & Uses
530	Arnold-Thomas Seed Service, 1972	Bacterial wilt, spotted alfalfa aphid, pea aphid, Leptosphaerulina, downy mildew resistant; moderate recovery, mild Flemish type; hay-silage type	Gladiator	Northrup, King & Co., 1973	Very resistant to bacterial wilt; tolerant to Anthracnose and alfalfa weevil; hay-pasture type
A-24	Embro Seed Co., 1967	Moderate regrowth; hay type	Haymor	Northrup, King & Co., 1962	Resistant to bacterial wilt; tolerant to common leafspot; hay-pasture type
Alfa II	Europe-Sweden, W. Weibull, Landskrog, 1966	Quick recovery; silage type	Lancer	Northrup, King & Co., 1971	Resistant to bacterial wilt; tolerant to alfalfa weevil; hay-pasture type
Anchor	W.R. Grace & Co., the Rudy-Patrick Seed Division, 1971	Bacterial wilt, pea aphid resistant; good regrowth; hay-silage type	Marathon	Northrup, King & Co., 1975	Resistant to bacterial wilt; tolerant to leafhopper yellowing; hay, green chop type
Angus	Canada Dept. Agr., Ottawa, 1973	Similar to Saranac, resistant to bacterial wilt; hay type	Nugget	North America Plant Breeders, 1975	Resistant to bacterial wilt, pea aphid; hay, green chop type
Apalachee	N. Carolina Agr. Exp. Sta. & USDA, 1971	Resistant to stem nematode and foliar diseases; hay-silage type	Orchies	Calapproved Seed Growers, 1963	Short rotation; hay type
Apex	W.R. Grace & Co., the Rudy-Patrick Seed Division, 1965	Upright; moderate regrowth; resistant to bacterial wilt, pea aphid, common leafspot; hay type	Promor	Northrup, King & Co., 1967	Resistant to bacterial wilt; hay type
Cardinal	France-Tourneur Freres Northrup, King & Co., 1963	Moderate regrowth; tolerant to common leafspot; powdery mildew and pea aphid resistant; hay-silage type	Resistador	Northrup, King & Co., 1963	Resistant to bacterial wilt and tolerant to spotted alfalfa aphid and stem nematodes, hay type
Citation	North America Plant Breeders, 1975	Resistant to bacterial wilt, pea aphid; hay, green chop type	Saranac	Cornell (N.Y.) Agr. Exp. Sta., 1963	Tolerant to leaf diseases; bacterial wilt resistant; fast regrowth; hay type
Dupuits	France-Tourneur Freres Northrup, King & Co., 1940's	Good regrowth; seedling and plant vigor; leafy; tolerant to root knot nematode; parentage of many new alfalfas; hay type	Talent	Oregon Agr. Exp. Sta., 1940's	Moderate resistance to stem nematode; wilt susceptible; hay type
Glacier	France-Tourneur Freres Northrup, King & Co., 1963	Dupuits growth habit; fall dormancy; hay type	Thor	Northrup, King & Co., 1971	Resistant to bacterial wilt, downy mildew; tolerant to leafspot; quick recovery; hay type

Non-Hardy Southern Varieties

Name	Originator & Year	Characteristics & Uses	Name	Originator & Year	Characteristics & Uses
167	Cal/West Seeds, 1974	Resistant to spotted alfalfa aphid; tolerant to pea aphids, Phytophthora, stem nematode, downy mildew, common leafspot; hay type	Sonora 70	Arizona Agr. Exp. Sta. & USDA, 1970	Relatively free of foliage diseases; adapted to Southwest
Caliverde 65	California Agr. Exp. Sta., 1965	Spotted alfalfa aphid, stem nematode, common leafspot resistant; adapted to Southwest; hay type	UC Salton	Univ. of California Agr. Exp. Sta., 1971	Adapted to low desert valley areas; growth under high temperatures; tolerance to root rot and resistance to biotype ENT-F of spotted alfalfa aphid; tolerant to pea aphid
El-Unico	Arizona Agr. Exp. Sta. & USDA, 1967	Resistant to spotted alfalfa aphid; for hay production in irrigated Southwest	WL 450	Waterman-Loomis, 1972	Stem nematode, spotted alfalfa aphid, downy mildew resistant; dehydration-hay-silage
Florida 66	Florida Agr. Exp. Sta., 1966	Tolerant to humid conditions; adapted to well-drained soils; hay type	WL 451	Waterman-Loomis, 1972	Spotted alfalfa aphid, pea aphid, root rot, bacterial wilt, stem nematode, downy mildew, Phytophthora resistant and more dormant than Moapa; hay, silage, dehydration in Southwest
Hayden	Arizona Agr. Exp. Sta. & USDA, 1970	Resistant to 4 biotypes of spotted alfalfa aphid; for hay production in the Southwest	WL 501R	Waterman-Loomis, 1972	Non-dormant; resistant to spotted alfalfa aphid; moderately resistant to pea aphid
Lew	Arizona Agr. Exp. Sta., 1974	Resistant to stem nematode, spotted alfalfa aphid; hay, green chop, haylage, pasture type	WL 504	Waterman-Loomis, 1971	Non-dormant; resistant to spotted alfalfa aphid; moderately resistant to pea aphid; hay type
Mesa-Sirsa	Arizona Agr. Exp. Sta. & USDA, 1965	Non-dormant; Southwest adapted; resistant to spotted alfalfa aphid and downy mildew; hay type	WL 508	Waterman-Loomis, 1971	Non-dormant, non-winter hardy; resistant to spotted alfalfa aphid, pea aphid, downy mildew, some leaf and root organisms; hay type
Moapa	Nevada Agr. Exp. Sta. & USDA, 1957	Resistant to spotted alfalfa aphid; some resistance to bacterial wilt	WL 600	Waterman-Loomis, 1972	Non-dormant; resistant to pea aphid, spotted alfalfa aphid; moderately resistant to downy mildew
Moapa 69	Nevada Agr. Exp. Sta. & USDA, 1969	Like Moapa except more resistant to spotted alfalfa aphid and greater midwinter growth	Zia	New Mexico Agr. Exp. Sta., 1958	Resistant to spotted alfalfa aphid; some resistance to Fusarium
Sonora	Arizona, Calif., Nev. Agr. Exp. Stas., 1962	Spotted alfalfa aphid resistant; high winter forage; good seedling vigor; tolerant to downy mildew			

Hardy to Moderately Hardy Mid-Continent Varieties

Name	Originator & Year	Characteristics & Uses	Name	Originator & Year	Characteristics & Uses
153	DeKalb Seed Co., 1967	Short-time stand; hay type	Team	N. Carolina, Maryland, Virginia Agr. Exp. Sta. & USDA, 1968	Moderate resistance to alfalfa weevil, leafspot, Anthracnose; high resistance to pea aphid; hay type
Americana	L. Teweles Seed Co., 1973	Tolerant to bacterial wilt, common leafspot, leafhopper yellowing; hay type	Washoe	Nevada Agr. Exp. Sta. & USDA, 1965	Resistant to pea aphids, bacterial wilt, stem nematode; hay type
Arc	Maryland, N. Carolina, Penn., Virginia Agr. Exp. Sta. & USDA, 1974	Highly resistant to Anthracnose and pea aphid; moderately resistant to bacterial wilt and alfalfa weevil; hay type	Weevilchek	Farmers Forage Res., 1970	Some resistance to alfalfa weevil, leafhopper yellowing and bacterial wilt; moderate growth recovery; hay-silage type
Atlantic	New Jersey Agr. Exp. Sta., 1957	Not wilt resistant; hay type	WL 218	Waterman-Loomis, 1973	Intermediate dormancy; resistant to bacterial wilt, Phytophthora, spotted alfalfa aphid, pea aphid; moderately resistant to leafspot, Anthracnose; tolerant to Fusarium wilt; hay type
Aztec	Asgrow Seed Co., 1973	Resistant to pea aphid, spotted alfalfa aphid and bacterial wilt; hay and silage type	WL 219	Waterman-Loomis, 1973	Moderately dormant; resistant to bacterial wilt; moderately resistant to spotted alfalfa aphid; hay-silage type
Aztec II	Asgrow Seed Co., 1974	Moderately winter hardy; resistant to pea aphid, spotted alfalfa aphid, bacterial wilt and tolerant to Anthracnose; hay and silage type	WL 306	Waterman-Loomis, 1969	Semi-fall dormant, moderately winter hardy; resistant to bacterial wilt, pea aphid, spotted alfalfa aphid; hay type
Buffalo	Kansas Agr. Exp. Sta. & USDA, 1943	Moderate growth recovery; bacterial wilt resistant; hay type	WL 309	Waterman-Loomis, 1972	Resistant to bacterial wilt, pea aphid, spotted alfalfa aphid; tolerant to Anthracnose; hay-silage type
Cayuga	N.Y. Agr. Exp. Sta., 1962	Bacterial wilt, common leafspot resistant; moderate to rapid regrowth; hay-silage type	WL 310	Waterman-Loomis, 1973	Moderately dormant; resistant to bacterial wilt, spotted alfalfa aphid; moderately resistant to stem nematode and pea aphid; hay type
Cody	Kansas Agr. Exp. Sta. & USDA, 1959	Spotted alfalfa aphid and bacterial wilt resistant; hay type	WL 311	Waterman-Loomis, 1973	Semi-fall dormant; resistant to bacterial wilt, spotted alfalfa aphid; moderately resistant to pea aphids, Anthracnose; hay type
Delta	Mississippi Agr. Exp. Sta. & USDA, 1966	Resistant to crown rot, root rot, leafspot and leafhopper; tolerant to humid climate; hay type	WL 318	Waterman-Loomis, 1974	Resistant to bacterial wilt, Phytophthora, pea and spotted alfalfa aphid; hay, haylage type
Gladiator	Northrup, King & Co., 1973	Very resistant to bacterial wilt; tolerant to alfalfa weevil and Anthracnose; hay type			
Kanza	Kansas Agr. Exp. Sta. & USDA, 1968	Resistant to pea aphid and spotted alfalfa aphid, bacterial wilt; hay type			
Klondike	L. Teweles Seed Co., 1971	Some disease resistance; branching roots; hay type			
Lahontan	Nevada Agr. Exp. Sta. & USDA, 1954	Bacterial wilt, stem nematode, spotted alfalfa aphid resistant; quick growth recovery; winter dormant; hay type			

Hardy Creeping-Rhizomatous Pasture-Hay Varieties

Name	Originator & Year	Characteristics & Uses	Name	Originator & Year	Characteristics & Uses
Drylander	Canada Dept. Agr.; Swift Current, Saskatchewan, 1971	Very hardy; creeping roots; yellow-cream flowers; bacterial wilt; dryland pasture; hay type	Rhizoma	Univ. of British Columbia, Vancouver, Canada, 1948	Very hardy; spreading rhizomes; pasture-creeping type
Kane	Canada Dept. Agr. Lethbridge, 1971	Very hardy like Roamer; drought tolerant; bacterial wilt resistant; hay type	Roamer	Canada Dept. of Agr. Swift Current, Saskatchewan, 1966	Very hardy; drought resistant; creeping branching roots; pasture-hay type
Nomad	E. F. Burlingham & Sons, 1951	Hardy; rhizomes; susceptible to wilt; pasture type variable	Spreador	Northrup, King & Co., 1975	Resistant to bacterial wilt; early fall dormancy; pasture-range type
Rambler	Canada Dept. Agr., Swift Current Sta., Saskatchewan, 1955	Very hardy; drought resistant; mildly creeping; moderately resistant to bacterial wilt; pasture type	Travois	S. Dakota Agr. Exp. Sta., 1963	Hardy; slow hay regrowth; bacterial wilt, common leafspot resistant; drought tolerant; creeping roots; pasture type

Issued in furtherance of cooperative extension work in agriculture and home economics. Acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture. James L. Graves, Director of Cooperative Extension Service, University of Idaho, Moscow, Idaho 83843. We offer our programs and facilities to all people without regard to race, creed, color, sex, or national origin.