REGISTRATION OF WL 512, WL 514 AND WL 515 ALFALFA
(Reg. No. 102 to 104)  

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'WL 512' (Reg. No. 102), 'WL 514' (Reg. No. 103) and 'WL 515' (Reg. No. 104) alfalfa (Medicago sativa L.) were developed by W-L Research, Inc.  

WL 512 was tested experimentally as 74 NH PyR. It is composed of 1251 plants that were selected at Bakersfield, California for resistance to Phytophthora root rot (caused by Phytophthora megasperma Drechs.). Plants were derived from populations that exhibited good persistence at Bakersfield and had been screened during previous cycles of selection for resistance to one or more of the following: stem nematode [Ditylenchus dipsaci (Kuhn) Filipjev], bacterial wilt [caused by Corynebacterium insidivorum (McCull.) H. L. Jans.], anthracnose [caused by Colletotrichum trifolii Bain.], spotted alfalfa aphid [Therioaphis maculata (Buckton)] and Phytophthora root rot. Biotypes of all aphids referred to in the development and reaction of WL 512, WL 514 and WL 515 were those occurring in Kern County, Calif. Parental selections for WL 512 were derived as follows: 1091 plants from 'WL 508' (1) and 'WL 508' (2), 81 plants from 'WL 600' (3), 62 plants from 'WL 450' (3), and 87 plants from crosses involving 'Sonora', 'Lahontan', 'Sarano', 'Vernal', 'Atlantic', Nevada N529 and University of California clones UC M9 and UC A14. Selected plants were interpollinated with honey bees (Apis mellifera L.) to produce breeder seed.  

WL 514 is somewhat more fall-dormant than 'Moapa 69'. It combines high resistance to spotted alfalfa aphid, resistance to pea aphid [Aphidaphis pismum (Harris)] and Fusarium wilt [caused by Fusarium oxysporum Schlecht f. sp. medicagoe (Weimer) Nym. & Hils.], moderate resistance to bacterial wilt, anthracnose, Phytophthora root rot and downy mildew [caused by Pseudomonas trifoliorum (D.) By]. and low resistance to stem nematode.  

WL 514 was tested experimentally as 70 T 4. It was developed in 1970 by mass selection from a three-year-old performance trial at Bakersfield, Calif. Parentage traces to 'WL 501-R' (3) (30.7%), WL 504 (21.4%), F, progeny of spotted alfalfa aphid resistant Sonora crossed with selections from an advanced generation of WL 504 (15.1%) and the non-dormant F, progeny from an outcrossed clone of the dormant cultivar 'WL 209' (32.8%). Parental plants (192 selections) were interpollinated with honey bees (Apis mellifera L.) to produce breeder seed.  

WL 515 is in the same full-dormancy class as Moapa 69. It is resistant to spotted alfalfa aphid and pea aphid; moderately resistant to bacterial wilt, Fusarium wilt and blue alfalfa aphid [Acrithosiphon kondoi (Shinji)]; and low in resistance to Phytophthora root rot and stem nematode.  

WL 515 was tested experimentally as 73 CA and 73 CA A-2. It was developed by screening several hundred thousand plants for one to three cycles for resistance to Phytophthora root rot. Source material for WL 515 is as follows: 127 plants from WL 504 and related experimental; 120 plants from WL 508 and related experimental; 53 plants from WL 600; 142 plants from WL 512; 256 plants from 'WL 450', 'WL 450' and 'WL 451' (3); 47 plants from WL 501 R; 5 plants from 'UC Saloon'; 4 plants from Beltsville 4-AN2. In addition, random crosses from isolation cages contributed the following selections: 18 plants from Lahontan, Nevada N529, Atlantic, 'Williamsburg', and WL 209; 95 plants from 'Zia' and Experimental 58 and 47 from the University of California; 17 plants from Nevada N529, Sarano, Williamsburg and PI 183262; 48 plants from Lahontan and WL 400's; two plants from 'WL 306', Atlantic and 'Team'; and 7 plants from 'Moapa' and Lahontan. The 921 plants were interpollinated with honey bees in an isolation cage to yield a seed in 1973 to produce breeder seed.  

WL 515 is a non-dormant cultivar in the same fall-dormancy class as Moapa 69. It is resistant to Phytophthora root rot, spotted alfalfa aphid, pea aphid, Fusarium wilt and stem nematode from Santa Maria, Calif. and moderately resistant to blue alfalfa aphid. It has low resistance to bacterial wilt and tolerance to smog damage.  

The flower color of the three cultivars, WL 512, WL 514 and WL 515, is predominantly purple, with a trace of blue variegated and white flowers. WL 512 and WL 514 have been tested for forage yield in California, Arizona and New Mexico where they are recommended for hay, haylage and dehydration purposes. WL 515 has been tested for forage yield and recommended for use in California.  

WL 512 and WL 514 seed are increased on a three generation basis; breeder, foundation and certified while WL 515 includes the registered seed class. Breeder seed of these cultivars was produced in isolation in Kern County, Calif. Foundation seed is produced in the San Joaquin Valley of California from breeder seed. Certified seed of WL 512 and WL 514 is produced from either foundation or breeder seed. Certified seed of WL 515 is produced from registered seed.  

WL 512, WL 514 and WL 515 were approved for certification by the National Certified Alfalfa Variety Review Board in 1976, 1978 and 1981, respectively. Application has not been made for plant variety protection.  

REFERENCES  


REGISTRATION OF PEACE ALFALFA
(Reg. No. 105)  

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'Peace' alfalfa (Medicago sativa L.) was developed at the Agriculture Canada Experimental Farm, Fort Vermilion, Alberta (Lat. 58°31' N). It was tested as FV-74 during the period 1975-1979, and received license number 2022 in Canada in April 1980.  

Peace originated from a landrace cultivar predominantly of the 'Grimm' type of alfalfa which had been grown in the Fort Vermilion area for many years. In 1965 a plot was established as  

Registered by the Crop Sci. Soc. Am. Publication No. 82-16.  

Registered July 5, 1982.  

Research scientist (plant survival), research scientist (legume seed production), retired, Agric. Canada Res. Stn., Beaverlodge, Alberta, and superintendent, Agric. Canada Exp. Farm, Fort Vermilion, Alberta, respectively.  