lateral under cage and interpollinated by honeybees (Apis mellifera L.)
to produce breeder seed.

WL 312 is similar in fall dormancy to WL 311 and Kanza. WL 312 combines high levels of resistance to spotted alfalfa aphid [Theroaphis
maculata (Buckton)] biotypes occurring in Kern County, California, pea
aphid [Acyrthosiphon pisum (Harris)] biotypes occurring in Maryland, and bacterial wilt, with moderate levels of resistance to an-
thracose, Fusarium wilt [caused by Fusarium oxysporum Schlecht f.
sp. medicaginis (Weimer) Syny. and Hans.], and Phytophthora root
rot. WL 312 has been tested for forage yield potential from New York
and Maryland west to Nebraska and Missouri and is recommended in this
general area for hay and haylage production.

Flower colors of a representative sample of plants will approximate
1% dark purple, 85% purple, 12% blue variegated, and 2% blue.

Only breeder, foundation and certified seed classes will be recog-
nized. Breeder seed is to be planted in the northern region of adaptation
to produce foundation seed. Certified seed will be produced from foun-
dation seed. Foundation seed fields will be limited to 5 years of pro-
duction.

WL 312 was favorably reviewed in 1978 by the National Certified
Alfalfa Variety Review Board. Application was not made for plant
variety protection.

REGISTRATION OF DOWNY WHEAT
(Reg. No. 641)

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"Downy" (CI17421) is a soft red winter wheat (Triticum aestivum L.
em Thell.) developed cooperatively by the Purdue University
Agricultural Experiment Station and the AR-SEA-USDA, and released
in 1976. Its parentage is: 'Abe' sib/3/'Arthur 71' sib/2/CI9321/'Beau'
sib. It is the first commercial soft red winter wheat cultivar with resistance
to the cereal leaf beetle (Oulema melanopus L.) and was developed for this purpose. Downy's resistance is due to the dense leaf
pubescence obtained from its CI9321 parent, a spring wheat introduc-
tion from USSR. The pubescence on the flag leaves of Downy averages
100 hairs/mm², compared to only 30/mm² for Arthur 71. This
pubescence density and lengths of hairs are sufficient to provide Downy
with a high level of resistance to the cereal leaf beetle. Additionally,
this type of pubescence has been shown to be somewhat effective in resistance to the Hessian fly (Mayetiola destructor Say) and the oat bird
cherry aphid (Rhopalosiphym padi L.) (1, 2).

Downy was selected in the F₁ generation for leaf pubescence and in the
F₂ generation for freedom from cereal leaf beetle damage. It was
tested again in the F₃, F₄, and F₅ generations under severe beetle infesta-
tion. A series of selections was made from the F₅ generation for eventual
compositing to form breeder seed which was in the F₇ generation.

Downy most nearly resembles Arthur 71 in plant type, maturity. It averages 105 cm tall and has erect flags. The spikes are lax, strap-shaped, apically awned,
and are immature. Downy's seed is red, ovate in shape, and smooth.

Average weight per 1,000 kernels is 35 g. All leaves and leaf sheaths are
densely pubescent.

Downy possesses the Hₐ gene for resistance to leaf rust (Puccinia tritici
Recondita Rob. ex. Desm. f. sp. tritici), stem rust (Puccinia graminis Pers. f. sp. tritici), powdery mildew (caus-
ed by Erysiphe graminis DC.) Merat f. sp. tritici Em. Marchal), and
loose smut (Ustilago tritici Pers.) Rostr., with moderate levels of resistance to all field biotypes of the insect now present in Indiana.

Downy is adapted to the eastern soft red winter wheat zone. It is par-
ticularly suitable for those areas having cereal leaf beetle problems.

Breeder seed will be maintained by the Nebraska Agric. Exp. Stn.

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tion and purification phases in developing Downy.