

United States Department of Agriculture
Agricultural Research Service

and

Utah Agricultural Experiment Station
Utah State University
Logan, Utah

and

United States Department of Agriculture
Soil Conservation Service

and

Montana Agricultural Experiment Station
Montana State University
Bozeman, Montana

and

Idaho Agricultural Experiment Station
University of Idaho
Moscow, Idaho

ANNOUNCE THE RELEASE OF 'BOZOISKY-SELECT RUSSIAN WILD RYE', PSATHYROSTACHYS JUNCEA, FISCH. NEVSKI (SYN. ELYMUS JUNCEUS, FISCH) ■

Bozoisky-select was developed from PI406 468 (Bozoisky) recently obtained from the USSR. The breeding population was subjected to two cycles of selection for improved vigor, leafiness, seed yield, coleoptile length, and seedling vigor. Breeder's seed was obtained by bulking the open pollination seed of 23 clones selected from a nursery consisting of 2,100 second-cycle plants.

Bozoisky-select has been significantly more vigorous and productive than 'Vinall' in range seedlings (Table 1). At eight semiarid range locations, it yielded 23% more forage than Vinall during the first two production years. Stand establishment of the new cultivar has been equal to or superior to Vinall in over 20 trials representing the Sagebrush, Juniper, Shadscale, **Greasewood, and Indian ricegrass ecosystems** (Table 2). Bozoisky-select had better seedling vigor and larger seeds than Vinall or Swift in laboratory trials (Tables 3, 4 and 5). Coleoptile length, a character associated with better seedling emergence from deep plantings, was significantly greater in

Bozoisky-select than in Vinall or Swift (Table 6). Grazing trials indicate that the strain is equally as palatable to grazing cattle as Vinall (Table 7). Recommended seeding rate for seed production is 25 kg per ha in rows spaced approximately 1 m apart. When drilling on rangeland, 7 kg per ha is recommended.

Breeder's seed will be maintained by the ARS at Logan, Utah. Foundation seed will be produced from breeder's seed by the SCS Plant Materials Center at Bridger, Montana and should be available by Spring, 1985. For information regarding supplies of Foundation seed, contact local soil conservation districts and agricultural experiment stations in Utah, Montana, and Idaho.

Certification of two generations beyond the foundation class will be permitted ■

APPROVAL :

Date

Agricultural Research Service
U.S. Department of Agriculture

Date

Utah Agricultural Experiment Station
Utah State University

Date

Soil Conservation Service
U.S. Department of Agriculture

Date

Director, Ecological Sciences and
Technology Division, Soil
Conservation Service, U. S.
Department of Agriculture

Date

Director, Montana Agricultural
Experiment Station, Montana State
University

Date

Director, Idaho Agricultural
Experiment Station, University of
Idaho

Table 1. Average forage yields of Vinall and Bozoisky-select Russian wildrye at eight range locations in Utah, Idaho, and Wyoming

| Cultivar | First Year | Second year |
|------------------------|-------------------|-------------|
| | ----- kg/ha ----- | |
| Vinall | 1012 | 1225 |
| Bozoisky-select | 1203 | 1547 |

Table 2. Percent stand of Vinall and Bozoisky-select Russian wildrye two years after seeding on five range ecosystems in Utah, Idaho, and Wyoming¹

| Cultivar | Ecosystem | | | | |
|-----------------|-------------------|----------------|------------------|-------------------|----------------------------|
| | Sagebrush (13) | Juniper (4) | Shadscale (3) | Greasewood (1) | Indian ricegrass (1) |
| | ----- % ----- | | | | |
| Vinall | 84 | 85 | 78 | 80 | 50 |
| Bozoisky-select | 81 | 86 | 84 | 83 | 60 |

¹ Numbers in parentheses indicate number of sites involved for each ecosystem.

Table 3. Seedling emergence and subsequent seedling vigor of three Russian wildrye cultivars from deep plantings (5cm) in the laboratory¹ ■

| Cultivar | Emergence | Dry Wt. |
|-----------------|-----------|---------|
| | % | g/plot |
| Vinall | 64 | 0.077 |
| Swift | 64 | 0.068 |
| Bozoisky-select | 61 | 0.097 |
| LSD (0.05) | 12 | 0.029 |

¹ Data represent averages of four replications per cultivar ■

Table 4. Seedling root development of three Russian wildrye cultivars after three weeks in the greenhouse ¹.

| Cultivar | Root length | Root Wt. | Shoot Wt. | Total Wt. |
|-----------------|-------------|---------------------|-----------|-----------|
| | mm | ----- mg/plant----- | | |
| Vinall | 16.6 | 2.47 | 3.44 | 5.91 |
| Swift | 17.1 | 2.33 | 3.36 | 5.69 |
| Bozoisky-select | 16.6 | 2.89 | 4.17 | 7.06 |
| L.S.D. (0.05) | 2.00 | 0.65 | 0.97 | |

¹ Data represent averages of 36 potted plants per cultivar.

Table 5. Relative seed size of three Russian wildrye cultivars

| | Seeds/kg |
|-----------------|----------|
| Vinall | 315,000 |
| Swift | 345,000 |
| Bozoisky-select | 300,000 |

Table 6. Coleoptile length of three Russian wildrye cultivars 15 days after germination¹.

| Cultivar | Coleoptile length |
|-----------------|-------------------|
| | mm |
| Vinall | 35.2 |
| Swift | 40.5 |
| Bozoisky-select | 43.6 |
| LSD (0.05) | 27 |

¹ Seedlings were grown on blotters in germination chambers programmed for 30/20 C day/night temperature and 16/8 hr day/night daylength regimes.

Table 7. Grazing preference of Vinall and Bozoisky-select Russian wildrye to cattle in trials established on a Sagebrush ecosystem.

| | Seeded Stands | Spaced Plants |
|-----------------|----------------------|---------------|
| | ----- % Grazed ----- | ----- |
| Vinall | 85 | 65 |
| Bozoisky-select | 90 | 65 |

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