

REDSSEN, A NEW BRIGHT RED-SKINNED POTATO VARIETY

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On March 1, 1983 the potato selection ND146-4R was released and named Redssen. The name is derived from the cultivar's bright-red skin color and the last syllable of the name "Johansen."¹

Redssen is the twelfth potato variety released by NDSU since the introduction of Norland in 1957. The six most popular varieties released by NDSU and grown today are Norland, Norgold Russet, Norchip, Bison, Viking and Crystal.

Potatoes are still the only horticultural crop grown in North Dakota that generates any appreciable income. The present average value of production of potatoes in North Dakota is approximately \$90 million. In Minnesota it is approximately \$80 million. This amount is from direct sales of potatoes only and does not take into account other created income such as that from handling and shipping potatoes, construction of storages and supplying machinery and chemicals as well as many other facets whereby income can be derived from growing potatoes.

The cross resulting in Redssen was made at NDSU in 1974 and the seedling was grown at the Langdon Experiment Station in 1975 at which time the original selection was made. The parentage of Redssen is ND8987-7R × ND9403-20R. In this cross, Bison is a parent of ND9403-20R and a grandparent of Redssen.

Although the plant somewhat resembles Bison, it has much better vigor and overall plant and leaf type. Redssen has about the same maturity as Norland but is much earlier than Red Pontiac. Tubers are similar to Bison, possessing good eye appeal and bright red skin color that lasts long in storage. Redssen tubers have round to oblong shape and shallow eyes. Redssen is ex-

cellent for baking and also boils fairly well. When boiled, it may have some after-cooking darkening following prolonged storage. It has fair to good chip color.

Redssen has some resistance to scab and silver scurf, resulting in clean bright red tubers. Both foliage and tubers are resistant to race 0 of late blight (*Phytophthora infestans*). It is susceptible to most other diseases. Because of its relatively thin skin, Redssen seems to be somewhat susceptible to bruising and to fusarium dry rot. Special care should be taken at harvest and handling into storage to prevent bruising, including good skin set prior to harvest, a longer period of time to allow bruises and wounds to heal and the use of mertect into storage.

Four-year yield trials (Table 1) have shown that Redssen will produce yields higher than Norland and Bison but not quite as high as Red Pontiac. Average yield for two locations in the Red River Valley for four years showed Redssen to produce 219 hundredweight per acre, compared with Norland, 180 hundredweight per acre; Bison, 169 hundredweight per acre and Red Pontiac 252 hundredweight per acre.

In the same trials (Table 2), the total solids or dry matter of Redssen was 20.3 percent compared with Norland with 19.2 percent, Bison 19.7 percent and Red Pontiac 19 percent. High dry matter potatoes are generally better for both processing and fresh use.

Redssen was grown and tested in the North Central Regional Trials (14 states and two provinces) from 1979-81. In the North Central Trials Overall Merit Ratings, Redssen ranked third in 1979, first in 1980 and second in 1981.

Redssen has been increased and produced by certified seed growers in North Dakota and Minnesota. A list of growers having certified seed of Redssen may be obtained by writing to the State Seed Department, North Dakota State University, Fargo, ND 58105 or the Minnesota Seed Department, 620 State Office Building, St. Paul, MN 55101.

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Although volatilization may not have been a big factor in trifluralin loss from granules left on the surface in the fall in these experiments, trifluralin vapor loss may still be important under certain conditions. Trifluralin volatilization from soil or granules is influenced by moisture (2, 3, 4), temperature (3, 4) and soil type (3). Sufficient trifluralin could be lost as vapors from surface applications to decrease foxtail control if conditions were abnormally warm or moist following fall application. Incorporation of trifluralin would serve as insurance against such factors reducing weed control.

Trifluralin, applied in the fall, resulted in wheat stand reductions ranging from 0 to 34 percent depending on the rate, formulation, depth of herbicide incorporation, depth of wheat seeding and whether trifluralin was applied alone or in combination with triallate. However, wheat appears to have the ability to compensate for much of the stand loss. Wheat stand reductions with trifluralin became less obvious with advancing maturity because of increased tillering of remaining plants.

To maximize wheat tolerance to fall application of trifluralin, trifluralin should be applied alone (not in combination with triallate). Data from limited ex-

periments also indicate that wheat should be seeded shallow and trifluralin incorporated deep (incorporation tool operated at a depth of 4 to 6 inches). Deep incorporation of trifluralin is generally considered important for consistent weed control.

LITERATURE CITED

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Table 1. U.S. No. 1 yield Cwt/A of Redsen and three standard varieties grown at Park River and Grand Forks, North Dakota (4 years data).

Variety	1979		1980		1981		1982		Average		Average both locations
	Park River	Grand Forks	Park River	Grand Forks	Park River	Grand Forks	Park River	Grand Forks	Park River	Grand Forks	
Redsen	223	244	227	152	162	260	257	230	217.3	221.5	219.4
Norland	193	228	262	162	121	174	126	173	174.4	184.3	179.9
Red Pontiac	252	244	332	219	200	291	270	229	263.5	245.8	254.6
Bison	165	191	204	176	101	207	143	166	153.3	185.0	169.1
Average	208.3	226.8	256.3	177.3	146.0	233.0	199.0	199.5	202.4	209.1	205.8

Table 2. Percent total solids of Redsen and three standard varieties grown at Park River and Grand Forks, North Dakota.

Variety	1979		1980		1981		1982		Average		Average both locations
	Park River	Grand Forks	Park River	Grand Forks	Park River	Grand Forks	Park River	Grand Forks	Park River	Grand Forks	
Redsen	20.9	20.3	19.9	19.9	20.1	20.1	19.9	21.2	20.2	20.4	20.3
Norland	19.9	20.1	19.0	19.2	18.4	18.8	18.8	19.4	19.0	19.4	19.2
Red Pontiac	19.4	20.5	17.9	18.2	18.8	19.0	18.2	19.7	18.6	19.4	19.0
Bison	19.7	20.9	19.7	18.6	19.4	19.7	18.8	20.7	19.4	20.0	19.7
Average	20.0	20.5	19.1	19.0	19.2	19.4	19.0	20.3	19.3	19.8	19.5