



# AC Peregrine Red 2006

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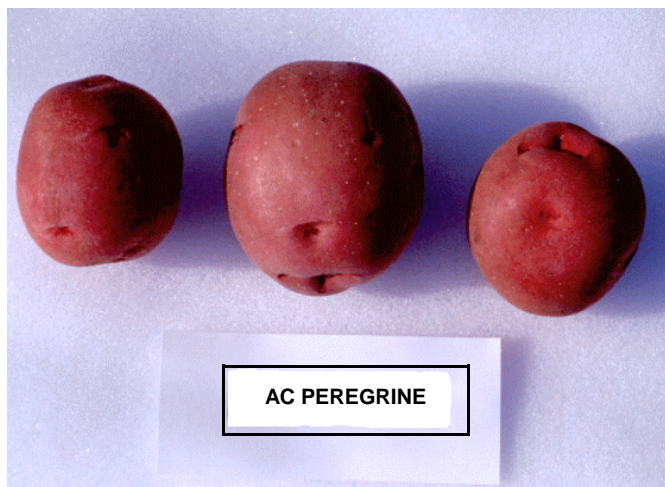
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## AC Peregrine Red (ND2937-3)

### Pedigree and Description

AC Peregrine Red (ND2937-3) is a Lethbridge selection of a cross made by NDSU in 1986 between ND373-2R and ND2223-8R. The Prairie Potato Breeding Program evaluated the field performance of AC Peregrine Red from 1988 through 1995 in trials conducted across the Prairie provinces. The variety was licenced to the Saskatchewan Seed Potato Growers Association (SSPGA) for testing purposes in 1997 and a full licence was applied for and approved in 1999. The variety received regional registration in 2000. Plant Breeder's Rights in Canada for AC Peregrine Red have been filed on behalf of NDSU. The variety has been evaluated in commercial production and storage trials for three years. Seed of AC Peregrine Red is exclusively available from members of the SSPGA. AC Peregrine Red is only approved for sale within Canada.



### Description

#### *Tubers*

Tubers of AC Peregrine Red are uniform oval-round, with a bright red skin. The flesh is white/cream. The eyes are shallow and uniformly distributed with small eyebrows. The lenticels are light color and somewhat obvious against the dark red skin. Specific gravities for AC Peregrine Red averaged over 24 site years of testing were 1.083, while Norland averaged 1.071. The higher specific gravity of AC Peregrine Red suggests superior storage potential. The average tuber size for AC Peregrine Red is about 10% smaller than Norland.

#### *Plants*

The plants are semi-erect, medium height with medium maturity. AC Peregrine Red flowers heavily but produces few fruit.

#### *Maturity*

AC Peregrine Red is a main crop variety. It matures 10 days to two weeks later than Norland, but earlier than Pontiac. Natural top die-off is uncommon. Skin set is excellent by two weeks after top kill.

### Yields

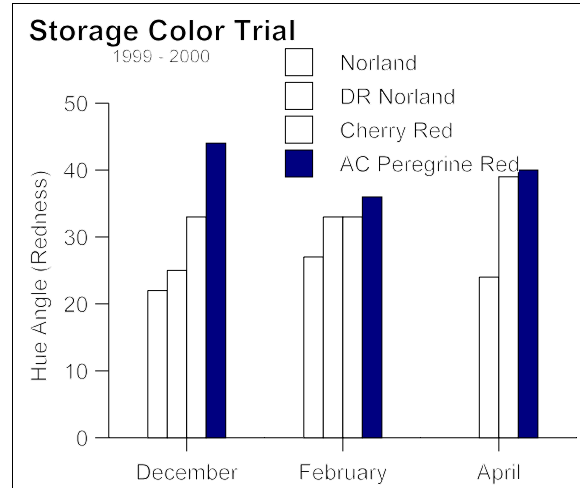
During 19 site years of evaluation in the Prairie Regional Trials, total yields for AC Peregrine Red at 120 days were higher than Norland, while marketable yields were comparable to Norland. In trials conducted by the University of Saskatchewan from 1997-2005, early yields (90 days) for AC Peregrine Red were about 80% of yields for Norland, but after 120 days yields were comparable.

**Storage Characteristics**

AC Peregrine Red has superior color at harvest to Norland and holds its color better during long term storage (Figure 1). Shrinkage during main-crop storage is comparable to Norland, if AC Peregrine Red is harvested fully mature. AC Peregrine has a longer dormancy period than Norland, but once its dormancy breaks, it sprouts readily. The longer dormancy reduces moisture loss when growing this variety for seed.

**Uses**

AC Peregrine Red represents a main crop alternative to Norland for the red-skinned table stock market. Its skin color is darker than Norland and the tuber shape is more uniform than Norland. These characteristics give AC Peregrine Red superior eye appeal. Its high set and smaller average tuber size also make it attractive in the B and Creamer markets. AC Peregrine Red is more resistant to after cooking discoloration than Norland; otherwise its quality in boiling/mashed and baked trials are comparable to Norland..



**Storage color of AC Peregrine Red.**

**Reactions to Diseases and Disorders**

AC Peregrine Red is resistant to fusarium dry rot, moderately resistant to early blight but susceptible to late blight. When grown on land heavily infested with common scab, AC Peregrine Red had slightly more scab than Norland, but far less than Pontiac. AC Peregrine Red has fewer tuber deformities (cracks, knobs and hollow heart) than Norland, resulting in a superior pack out.

**Herbicide Response**

In trials conducted under irrigation in 2001, a full rate of foliar-applied metribuzin (Sencor) applied 4 weeks after emergence did not produce any foliar damage and had no impact on yields, tuber size distribution or skin color of either AC Peregrine Red or Norland. Pre-plant application of metribuzin also had no impact on AC Peregrine Red.

**Production Recommendations**

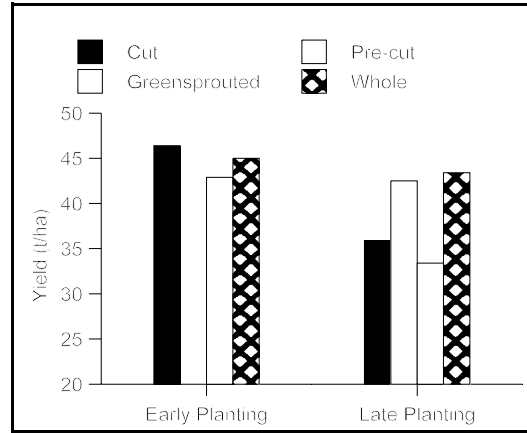
Production practices used for Norland should work well for AC Peregrine Red. As AC Peregrine Red is slower maturing than Norland, growers should use management practices that promote earliness (early planting) or extend the growing season (late top kill).

	<b>Yield increase with early planting <sup>z</sup></b>	<b>Yield increase from 90-120 days after planting</b>
<b>Norland</b>	23 %	21 %
<b>AC Peregrine</b>	38%	32 %

<sup>z</sup> Early planting = May 15. Late Planting = June 7. Data from 2000-2005 trials.

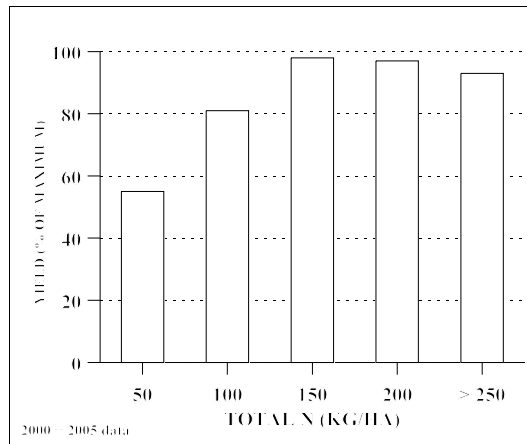
AC Peregrine Red may benefit from seed handling treatments that break dormancy and accelerate crop development.

In trials conducted in 2001, use of whole seed or pre-cutting seed resulted in the best performance, particularly if planting was delayed.



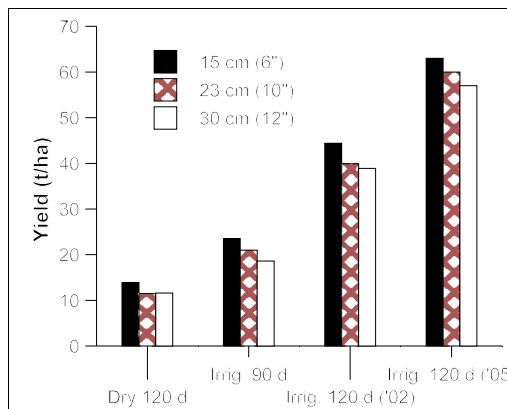
**Influence of seed handling on yields of AC Peregrine Red**

AC Peregrine Red's responses to N fertility are comparable to Norland, with yields plateauing at 150 kg N/ha.

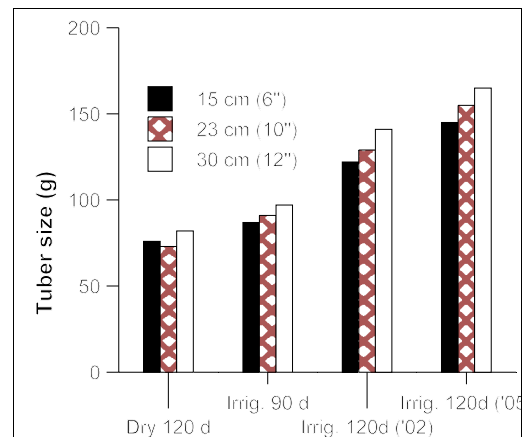


**Nitrogen response of AC Peregrine Red**

Although close in-row spacing increase yields of AC Peregrine Red, a slightly wider seedpiece spacing may help accelerate crop maturity. Altering the in-row spacing has very little impact on the average tuber size of AC Peregrine Red.



**Yield response of dryland and irrigated AC Peregrine Red to in-row spacing (2000, 2002 and 2005 trials)**



**Tuber size distribution of dryland and irrigated AC Peregrine Red to in-row spacings (2000, 2002 and 2005 trials)**

Averaged over the 18 site years of Registration trials, AC Peregrine Red appeared to be somewhat less sensitive to drought stress than Norland (dryland yields of Norland = 31 % less than irrigated, while dryland yields of AC Peregrine Red were only 27% less than under irrigation. Trials conducted from 1998-2005 suggest that the relative drought tolerance of AC Peregrine and Norland will vary depending on the year, the severity and the timing of drought stress.

**Percent yield reduction due to drought stress for Norland and AC Peregrine Red.**

	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2004</b>	<b>2005</b>
<b>Norland</b>	65	7	30	88	44	35
<b>AC Peregrine Red</b>	83	22	42	98	32	25

\* Yield reduction = 1-(dryland yields/irrigated yields)\*100.

For more information on AC Peregrine Red see :

Lynch, D.R., G Secor, LM Kawchuk, D Waterer, CA Schaupmeyer, J Holley, DK Fujimoto, D Driedger, J Wahab and MS Goettel. "AC Peregrine Red: A High-yielding Red-skinned Fresh Market Cultivar." Amer. J. Potato Res. Vol. 78, 333-337.