

Potato Variety Performance

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TABLE OF CONTENTS

Introduction	1
Matanuska Farm Yield Trials	
Cultural Practices - Environmental Conditions	1
Results and Discussion	3
Trials at Other Locations in Alaska	
General Procedures	4
Specific Site Information	
Ambler	4
Delta Junction	5
Kake	5
Kenai - Soldotna	5
Kodiak	5
Kotzebue	5
Palmer	5
Pt. MacKenzie	6

LIST OF TABLES:

Table 1: Climatic data for Matanuska Farm during the 1988 growing season	6
Table 2: Irrigated yield trial summary, Matanuska Farm	7
Table 3: Nonirrigated yield trial summary, Matanuska Farm	8
Table 4: Comparative summary of US #1 tuber yields by selected varieties in irrigated trials conducted from 1985 through 1988	9
Table 5: Comparative summary of US #1 tuber yields by selected varieties in nonirrigated trials conducted from 1984 through 1988	10
Table 4: Type and quantity of gradeout observed among selected varieties in irrigated and nonirrigated 1988 trials	11
Table 7: Yield trial summary from selected Alaskan locations in 1988	12
Table 8: Length of the 1988 potato growing season at eight locations in Alaska	13

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2. Delta Junction: Don Quarberg (Cooperative Extension Service[CES]).
3. Kake: Mr. and Mrs. Chuck Larson.
4. Kenai-Soldotna: Warren Larson (CES).
5. Kodiak: Joe Hiller (CES).
6. Kotzebue - Lori Restad (Maniilaq Association).
7. Pt. MacKenzie: Jerry Purser (CES).

INTRODUCTION

A comparative yield trial with 24 named varieties and numbered selections of potatoes was conducted at the University of Alaska Fairbanks, Agricultural and Forestry Experiment Station's Palmer Research Center during the 1988 growing season. The trial was conducted at the Matanuska Research Farm, located six miles west of Palmer on Trunk Road. Nonirrigated trials have been conducted annually since 1982, and irrigated trials started in 1985. Results of previous trials have been recorded in AFES Circulars 49, 54, 58 and 65. These circulars are available at the Agricultural and Forestry Experiment Station offices in Fairbanks and Palmer.

Also included in this circular are the results of abbreviated versions of the AFES potato yield trial that were conducted by cooperating individuals and agencies at seven locations throughout the state.

A newly named potato variety of Alaskan origin, 'IditaRed,' appears in this variety performance report for the first time. The performance of IditaRed has been reported in previous publications under the numerical label "18-6." IditaRed was selected by C.H. Dearborn in 1971 and has been tested annually at Palmer since 1981. IditaRed was released to the Alaska Seed Growers, Inc., (Box 895, Palmer) on October 28, 1988. Certified seed is now available to commercial seed growers. Reprints of the formal variety description of IditaRed will be available soon at AFES offices in Fairbanks and Palmer.

MATANUSKA FARM YIELD TRIALS

Cultural Practices - Environmental Conditions

Duplicated trials, irrigated and nonirrigated, were planted at the Matanuska Farm on May 12, 1988. Seedbed preparation included plowing to a depth of 8-10 inches followed by discing and

packing. Seedbed preparation was scheduled to permit planting as quickly as possible after tilling. In so doing, loss of early spring moisture from the soil was held to a minimum. Four randomly placed replicates of each variety, with 22 individual plants per replicate, were planted in rows 36 inches apart. Seed pieces were planted with a single-row Iron Age assist-feed planter and were spaced approximately 11 inches apart in the row. They were covered with 2-to-3 inches of packed soil. Granular fertilizer (8-32-16) was applied at the rate of 1200 lbs/acre by the planter in bands beside and below the seed. The rate of application of fertilizer was slightly higher than in some previous years due to lower levels of residual phosphorus (P) and potassium (K) in the soil. Tensiometers were installed at depths of 6 and 12 inches in the irrigated plots, and water was applied when the tensiometer readings rose to 40 centibars. Weeds were controlled by a preemergent application of glyphosate followed by cultivation and handweeding.

Seed of most varieties used in these trials was produced on the Experiment Farm either from stocks inherited from the discontinued USDA potato breeding program, or from stocks acquired from various certification agencies in the contiguous 48 states and Canada. This seed may have contained certain latent viruses. Seed of 'Green Mountain' was provided by a local seed grower. Since Green Mountain seed was produced and stored under conditions that may have been different, direct comparisons of performance with the other 23 varieties should not be made. Seed of all varieties except Green Mountain was dipped in a 1.85% aqueous solution of formaldehyde for two minutes at room temperature to kill any pathogenic fungi or bacteria present on the tuber surfaces. The principal target of the formaldehyde dip was *Rhizoctonia solani*. All seed was cut from similar sized tubers.

The 1988 growing season began warmer and drier than normal. May rainfall was 50% below the long term average. Mean daily air temperature was 1.5°F above the long term average for the month of May (Table 1). The combination of these conditions resulted in early emergence and a very fast start for the crop. As the season progressed, sunny days were common and mean temperatures remained at or near normal. Rainfall increased to an above average rate in June, slowed in July, then finished the season near the average accumulation. For the entire growing season 8.66 inches of rain fell, compared to the long term average of 9.54 inches.

Harvesting began on September 13 and was completed on September 14. Moderate temperatures prevailed during harvesting and soil moisture was moderate to low. Freezing temperatures did not occur until after the harvest was completed.

Results and Discussion

Results of the irrigated and nonirrigated variety trials are presented in Tables 2 and 3, respectively. Comparison of irrigated trials from 1985 to 1988 (Table 4) shows the 1988 average yield to be 3 tons/acre greater than the four year average across varieties. Yields in the nonirrigated trials were slightly less than average (Table 5). A numbered selection from the collection of C.H. Dearborn (6-78-139-80) was first in US #1 and total yield in the 1988 irrigated and nonirrigated trial (Table 6). Each year since 1984, 6-78-139-80 has yielded well, and a continuation of this performance may make it worthy of consideration by commercial growers.

Warm temperatures early in the season may account for the comparatively high yields observed in 1988. A study of the climatic summary in Table 1 reveals that monthly temperatures were within normal ranges except for May, when the mean temperature was considerably higher than normal. The warm spring promoted early emergence, thus lengthening the growing season. Some plants emerged in 25 days or less in 1988. A minimum of 30 to 35 days is usually required for emergence.

Soils were dry early in the season, but rain fell for the rest of the season at approximately the average rate. A comparison of tables 2 and 3, however, illustrates yields were considerably higher in the irrigated plots indicating this average rate of rainfall was far short of providing the optimum amount of water for maximum production. Warm temperatures enhanced the effect of early season soil dryness and thereby magnified the difference between irrigated and nonirrigated yields. Although the warm, dry soils enhanced emergence, without the additional water applied through irrigation, maximum yields were not realized.

Percent US #1 and specific gravity values were generally higher than in previous years. Information on gradeout, presented in Table 6, illustrates the generally high percentage of US #1 and the specific causes for gradeout. The percentage of US #1 usually was much higher in irrigated

treatments compared to nonirrigated treatments of the same variety. Where a large difference occurred, it usually was the result of a significant increase in shatter cracking in tubers from nonirrigated plots. This was especially true with varieties 'Superior' and IditaRed, and is consistent with a similar observation made in 1987 with the same two varieties. It is not clear why this happens, but it is clear that dry conditions during the season and at harvest contribute to shatter cracking in Superior and IditaRed.

TRIALS AT OTHER LOCATIONS IN ALASKA

General Procedures

Seed of 10 potato varieties was sent to seven cooperators for planting at seven locations throughout Alaska. Some of the cooperators are private citizens, while others are employed by state (Agricultural and Forestry Experiment Station), state-federal (Cooperative Extension Service) or private (Maniilaq Assn.) agencies. When environmental conditions permitted, seeds were planted in rows 36 inches apart with plants 11-12 inches apart in the row. At most locations, commercial fertilizers were applied at a rate that was comparable to that applied at Matanuska Farm. Crop maintenance - to include irrigation, fertilization, weed control, and hilling - was carried out by each cooperator at his/her respective site and may have varied from site to site. Frost damaged vines at Ambler, Delta Junction, Kenai and Kotzebue, but not at the other sites. Total and US #1 yields for each variety at each site are summarized in Table 7. Season lengths at the seven sites and the Matanuska Farm are summarized in Table 8.

Specific Site Information

Ambler - The Ambler trial was conducted by Lori Restad (Maniilaq Assn) and John Blower. The potatoes were planted in Mr. Blower's garden in the community of Ambler. Planting occurred on June 7. June was very dry, and it was necessary to irrigate on several occasions. A forest fire in the nearby Waring mountains made Ambler smokey for most of July, and no doubt reduced yield to some degree. Although irrigated, the crop probably could have used more water than it received.

On September 1 a 27°F frost severely damaged the vines, and on September 2 the crop was harvested. The 1988 growing season in Ambler was judged to be average to less than average.

Delta Junction - The Delta Junction trial was conducted by Don Quarberg (CES). The trial was planted on May 16 at the AFES site near Delta Junction. On August 24, the temperature reached 26°F, essentially killing the vines to the ground. The crop was harvested on August 29.

Kake - The trial at Kake was conducted by Mr. and Mrs. Chuck Larson. Planting was completed on May 31, and the crop was harvested at two different times, September 24 and November 20. Equipment and weather made it impossible to complete the harvest in a more appropriate way. The first frost did not occur until well after harvest, so frost was not a factor in determining season length. The entire growing season was wet, making most operations, from planting to harvest, difficult. The Larsons indicated that 1988, like 1987, was a below average year for potatoes and gardening in general in Kake.

Kenai-Soldotna - Warren Larson (CES) planted this trial at the community garden in Kenai on May 20. A light frost (30°F) occurred on September 6, and damage due to this frost was moderate. Harvest was completed on September 16.

Kodiak - This trial was planted by Joe Hiller (CES) on June 6 at the Borough Fairgrounds 10 miles south of Kodiak City. Potatoes were planted in raised beds. The growing season was near normal in terms of rainfall and temperature. Harvest was completed on September 19, and freezing temperatures did not occur until well after harvest.

Kotzebue - The Kotzebue trial was planted by Lori Restad (Manilaq Assn.) on June 15 at a garden site near the Senior Citizens' Center in Kotzebue. Irrigation water was applied when necessary. A 29°F frost occurred on September 5, and harvesting commenced on September 10.

Palmer - The trial in Palmer was planted on May 12 at the Matanuska Experiment Farm. Soils were dry initially, but irrigation water was applied as needed. Sunny weather was common during the growing season and yields were well above average. Harvest occurred on September 13, several days before the first frost of the season.

Pt. MacKenzie - The Pt. MacKenzie trial was planted by Meg Burgett and Mary Boyd on the Williams Farm on May 23. Weeds were controlled with a preemergence application of glyphosate. Conditions were generally dry, which no doubt limited yield. Potatoes were harvested on September 19.

Table 1. Climatic data for Matanuska Farm during the 1988 growing season.

	May	June	July	August	September
Temp. (°F) Air					
Daily Max.	57.9 (57.7) ¹	63.3 (65.2)	65.6 (67.4)	64.3 (64.9)	56.5 (56.4)
Daily Min.	38.9 (36.1)	45.7 (44.1)	49.3 (47.7)	45.4 (45.6)	36.2 (38.4)
Daily Mean	48.4 (46.9)	54.5 (54.6)	57.5 (57.6)	54.9 (55.3)	46.4 (47.4)
Precip.(in.)	0.48 (0.72)	1.81 (1.52)	1.60 (2.37)	2.34 (2.53)	2.43 (2.40)

¹ Values in parenthesis represent a 53-year average.

Table 2. Irrigated yield trial summary, Matanuska Farm.¹

Variety ²	US #1 ³	Small ⁴	Other ⁵	Total	Percent US #1	Tuber Weight ⁶	Specific Gravity
6-78-139-80	21.3	1.8	0.4	23.5	90.6	5.3	1.097
Green Mountain	19.4	0.7	1.7	21.9	88.8	6.8	1.102
Sangre	18.3	1.3	1.2	20.9	88.2	5.8	1.088
Superior	18.2	0.3	1.8	20.3	89.5	7.1	1.085
IditaRed	17.8	0.9	4.9	23.5	74.8	6.3	1.083
Shepody	16.9	1.1	1.0	19.1	88.8	7.6	1.093
3-79-168-81	16.9	1.0	0.6	18.4	91.4	5.2	1.103
Nooksack	16.7	0.5	1.8	18.9	88.2	6.5	1.107
Lemhi	16.3	0.7	2.0	19.1	85.4	8.7	1.098
6-5	15.9	0.5	1.7	18.1	87.2	7.1	1.090
NDA 8694-3	15.9	0.7	2.2	18.9	84.4	6.0	1.087
Rosa	15.9	1.9	1.3	19.1	83.3	5.5	1.083
Penn 71	15.9	0.5	3.2	19.6	81.0	8.0	1.090
AF 4114-4	15.6	1.5	0.5	17.7	88.3	6.8	1.096
3-79-280-81	15.6	0.8	2.2	18.6	84.1	6.2	1.098
Penn 71-007	15.2	0.4	3.7	19.3	78.7	8.0	1.092
Norking	14.0	1.3	2.4	17.7	79.0	6.0	1.099
APC 597	13.8	0.2	2.4	16.4	84.6	6.7	1.088
Russet Burbank	13.6	3.3	0.5	17.5	78.0	4.6	1.104
Russet Norkotah	13.0	1.8	0.3	15.0	86.5	5.1	1.080
Russette	12.6	0.8	3.6	17.0	74.9	7.3	1.101
ND 860-2	12.4	1.6	0.8	14.8	83.5	4.4	1.093
Reddale	11.1	0.4	7.8	19.3	58.1	8.5	1.081
APC 756	10.2	0.4	6.0	16.6	61.4	7.7	1.087
Average	15.5	-	-	18.8	82.4	-	1.093
LSD 5% ⁷	2.7			2.4			

¹ Yields expressed in tons/acre. All figures except those for Lemhi and 6-5 represent least square means of 4 replications.

² Numbered selections originated in the breeding program of C.H. Dearborn.

³ #1 market grade as defined by the US Department of Agriculture.

⁴ Tubers less than 1.75 inches in diameter.

⁵ Includes oversize, shatter or growth crack, second growth, green, etc.

⁶ Average weight of #1 tubers in ounces.

⁷ LSD: Least significant difference based upon type 1 comparison wise error rate.

Table 3. Nonirrigated yield trial summary, Matanuska Farm. ¹

Variety ²	US #1 ³	Small ⁴	Other ⁵	Total	Percent US #1	Tuber Weight ⁶	Specific Gravity
6-78-139-80	17.2	1.9	0.4	19.5	88.3	5.0	1.099
Shepody	14.4	0.8	0.7	15.9	90.5	7.1	1.097
Rosa	13.9	1.5	1.7	17.2	81.0	5.0	1.092
3-79-280-81	13.2	0.9	2.6	16.7	79.0	5.6	1.101
Nooksack	13.2	0.3	2.7	16.2	81.1	6.4	1.108
Penn 71-007	12.9	0.4	3.0	16.3	79.3	8.5	1.096
3-79-168-81	12.8	0.9	1.2	14.9	85.9	5.2	1.104
Sangre	12.4	1.2	2.4	16.1	77.6	5.6	1.093
Russet Burbank	11.9	2.6	0.6	15.1	78.7	4.7	1.107
Kennebec	11.9	0.5	2.7	15.1	78.4	8.1	1.094
Superior	10.9	0.5	4.3	15.7	70.2	5.4	1.088
3-79-270-81	10.9	0.6	2.3	13.7	78.2	7.1	1.094
Penn 71	10.7	0.3	4.3	15.3	70.3	7.3	1.095
IditaRed	9.9	1.2	6.5	17.6	56.0	4.9	1.087
AF 4114-4	9.4	1.4	1.0	11.8	79.2	5.9	1.094
6-5	9.2	0.7	5.0	14.9	61.6	5.7	1.093
Norking	8.9	1.1	4.1	14.0	62.8	5.4	1.100
Russet Norkotah	8.7	2.2	1.0	11.9	73.6	4.4	1.086
ND 860-2	8.6	0.9	2.4	11.9	72.5	4.3	1.096
Russette	8.3	0.8	4.4	13.5	61.2	7.0	1.106
APC 597	7.9	0.4	6.0	14.3	55.0	6.9	1.090
NDA 8694-3	7.7	0.4	4.5	12.6	60.3	5.4	1.088
APC 756	7.7	0.4	4.7	12.8	59.7	6.1	1.092
Allagash	7.4	0.3	1.3	9.1	81.3	7.8	1.089
Average	10.8	-	-	14.7	73.4	-	1.095
LSD 5% ⁷	2.1				1.7		

¹ Yields expressed in tons per acre. All figures except those for 3-79-270-81 represent least-square means of 4 replications.

² Numbered selections originated in the breeding program of C.H. Dearborn.

³ #1 market grade as defined by US Department of Agriculture.

⁴ Tubers less than 1.75 inches in diameter.

⁵ Includes oversize, shatter or growth crack, second growth, green, etc.

⁶ Average weight of #1 tubers in ounces.

⁷ LSD: Least significant difference based upon type 1 comparison wise error rate.

Table 4. Comparative summary of US #1 tuber yields by selected varieties in irrigated trials conducted from 1985 through 1988. ¹

Variety	1985	1986	1987	1988	Average ²
Alaska 114	13.3	12.2	13.6	-	13.0
Bakeking	14.6	12.3	13.8	-	13.6
Denali	13.1	12.3	12.1	-	12.5
Green Mountain	15.2	13.0	15.5	19.4	15.8
Kennebec	13.8	16.9	12.7	-	14.5
Lemhi	12.3	10.8	13.6	16.3	13.3
Rosa	14.4	12.7	13.8	15.9	14.2
Russet Burbank	10.3	8.5	9.9	13.6	10.6
Shepody	14.3	12.8	12.4	16.9	14.1
Superior	14.7	14.2	14.5	18.2	15.4
3-79-270-81	14.8	15.4	11.1	-	13.8
18-6	14.6	13.7	13.5	17.8	14.9
LSD 5% ³	2.0	3.2	2.1	2.7	-
Average	13.8	12.9	13.0	16.9	13.8

¹ Yields expressed in tons per acre. #1 market grade as defined by the US Department of Agriculture.

² Average calculated on yields from 1985-1988.

³ Least significant difference.

Table 5. Comparative summary of US #1 tuber yields by selected varieties in nonirrigated trials conducted from 1984 through 1988.¹

Variety	1984	1985	1986	1987	1988	Average ³
Alaska 114	14.2	7.2	14.3	10.0	-	12.4
Bakeking	12.4	9.3	12.1	10.5	-	12.2
Denali	12.6	8.5	11.4	6.6	-	10.8
Green Mountain	15.0	9.1	15.5	12.4	-	14.8
Kennebec	16.5	9.8	13.6	12.0	11.9	14.5
Lemhi	11.6	8.4	14.8	10.8	-	12.3
Rosa	-	10.5	14.1	11.6	13.9	13.4
Russet Burbank	9.2	8.2	11.0	10.2	11.9	10.8
Shepody	14.4	9.4	14.2	11.7	14.4	12.8
Superior	12.4	8.6	11.1	8.2	10.9	10.7
3-79-270-81	13.1	9.4	14.8	10.2	10.9	12.6
18-6	16.4	9.2	14.0	9.7	9.9	13.9
LSD 5% ²	1.9	2.1	2.5	2.0	2.1	-
Average	13.4	9.0	13.4	10.3	12.0	12.6

¹ Yields expressed in tons per acre. (- indicates variety not tested). #1 market grade as defined by the US Department of Agriculture.

² Least significant difference.

³ Average calculated on yields from 1982 through 1988, although data from 1982 and 1983 are not included.

Table 6. Type and quantity of gradeout observed among selected varieties in irrigated and unirrigated 1988 trials.¹

		Total	#1	Under size	Over size	Shatter crack	Growth crack	Second growth	Other ²
Green Mtn.	(I) ³	21.9	19.4 (88.6)	0.7 (3.2)	0.8 (3.7)	0.2 (0.9)	0.0 (0.0)	0.3 (1.4)	0.7 (3.2)
IditaRed	(UI)	17.6	9.9 (56.3)	1.2 (6.8)	0.1 (0.6)	6.3 (35.8)	0.1 (0.6)	0.1 (0.6)	0.0 (0.0)
	(I)	23.5	17.8 (75.7)	0.9 (3.8)	0.4 (1.7)	4.3 (18.3)	0.0 (0.0)	0.2 (0.9)	0.1 (0.4)
Nooksack	(UI)	16.2	13.2 (81.5)	0.3 (1.9)	0.0 (0.0)	2.6 (16.0)	0.0 (0.0)	0.1 (0.6)	0.1 (0.6)
	(I)	18.9	16.7 (88.4)	0.5 (2.6)	0.0 (0.0)	1.6 (8.5)	0.1 (0.5)	0.1 (0.6)	0.0 (0.0)
Rosa	(UI)	17.2	13.9 (80.8)	1.5 (8.7)	0.0 (0.0)	1.4 (8.1)	0.1 (0.6)	0.1 (0.6)	0.3 (1.7)
	(I)	19.1	15.9 (83.2)	1.9 (9.9)	0.1 (0.5)	0.2 (1.0)	0.1 (0.5)	0.1 (0.5)	0.9 (4.7)
Russet Burbank	(UI)	15.1	11.9 (78.8)	2.6 (17.2)	0.0 (0.0)	0.4 (2.6)	0.0 (0.0)	0.1 (0.7)	0.1 (0.7)
	(I)	17.5	13.6 (77.7)	3.3 (18.9)	0.0 (0.0)	0.1 (0.6)	0.3 (1.7)	0.1 (0.6)	0.2 (1.1)
Sangre	(UI)	16.1	12.4 (77.0)	1.2 (7.5)	0.3 (1.9)	1.9 (11.8)	0.0 (0.0)	0.1 (0.6)	0.1 (0.6)
	(I)	20.9	18.3 (87.6)	1.3 (6.2)	0.2 (1.0)	0.6 (2.9)	0.0 (0.0)	0.2 (1.0)	0.1 (0.5)
Shepody	(UI)	15.9	14.4 (90.6)	0.8 (5.0)	0.0 (0.0)	0.1 (0.6)	0.2 (1.3)	0.2 (1.3)	0.2 (1.3)
	(I)	19.1	16.9 (88.5)	1.1 (5.8)	0.1 (0.5)	0.0 (0.0)	0.0 (0.0)	0.1 (0.5)	0.9 (4.7)
Superior	(UI)	15.7	10.9 (69.4)	0.5 (3.2)	0.2 (1.3)	3.8 (24.2)	0.0 (0.0)	0.1 (0.6)	0.1 (0.6)
	(I)	20.3	18.2 (89.7)	0.3 (1.5)	0.0 (0.0)	1.3 (6.4)	0.0 (0.0)	0.1 (0.5)	0.5 (2.5)
6-78-139-80	(UI)	19.5	17.2 (88.2)	1.9 (9.7)	0.1 (0.5)	0.0 (0.0)	0.1 (0.5)	0.1 (0.5)	0.2 (1.0)
	(I)	23.5	21.3 (90.6)	1.8 (7.7)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.1 (0.4)	0.4 (1.7)
3-79-270-81	(UI)	13.7	10.9 (79.6)	0.6 (4.4)	0.5 (3.6)	1.1 (8.0)	0.2 (1.5)	0.3 (2.2)	0.2 (1.5)
	(I)	14.5	12.7 (87.6)	0.5 (3.4)	0.0 (0.0)	0.5 (3.4)	0.1 (0.7)	0.4 (2.8)	0.5 (3.4)

¹ Weights expressed in tons per acre. Values in parenthesis indicate percent of total yield.

² Includes green, rotten, etc.

³ (UI) = unirrigated, (I) = irrigated.

Table 7. Yield trial summary from selected Alaskan locations in 1988.¹

Variety	Ambler		Delta Junction		Kake		Kenai		Kodiak		Kotzebue		Palmer		Point MacKenzie	
	#1 ²	Total ³	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total	#1 Total
Alaska 114	8.2	11.9	10.3	13.0	3.6	9.8	11.2	17.4	3.8	14.8	2.3	8.8	-	-	7.7	10.8
Bakeking	13.1	17.2	9.0	10.3	4.5	8.7	13.4	15.4	6.5	15.4	5.0	10.8	-	-	9.8	11.2
Denali	10.2	14.8	9.8	11.9	3.5	8.4	7.1	12.0	5.3	16.8	5.2	9.7	-	-	7.9	9.4
Green Mountain	13.3	19.9	16.8	19.0	8.2	14.5	11.3	20.4	8.5	24.9	5.5	14.4	19.4	21.9	12.0	14.4
IditaRed	6.7	12.4	12.5	13.8	4.4	10.7	8.0	14.5	7.5	19.8	4.9	9.8	17.8	23.5	10.3	12.7
Kennebec	11.5	15.5	12.4	13.8	5.6	9.0	13.3	16.4	8.0	17.9	6.3	12.4	13.0	17.5	8.8	11.0
Lemhi	6.5	10.3	9.9	14.8	6.8	11.3	13.4	17.4	7.6	18.4	4.9	10.8	16.3	19.1	9.5	11.9
Shepody	10.9	15.3	12.0	14.4	6.8	11.0	13.2	15.9	4.2	12.8	5.3	8.6	16.9	19.1	7.9	9.6
Superior	12.7	16.3	7.3	8.8	6.3	11.8	14.0	17.3	-	-	4.2	9.8	18.2	20.3	7.4	8.5
3-79-270-81	6.4	11.2	9.6	12.1	3.6	7.7	13.3	16.6	3.0	11.0	4.7	10.2	12.7	14.5	6.3	8.4

¹ All #1 and total yields are expressed in tons per acre (-indicates variety not tested). Yield figures represent the average of three replications at all locations except Palmer, where there were four replications.

² #1 market grade as defined by the US Department of Agriculture.

³ Total yield = #1 plus gradeout. Gradeout includes undersize, oversize, growth and shatter crack, green, etc.

Table 8. Length of the 1988 potato growing season at eight locations in Alaska.

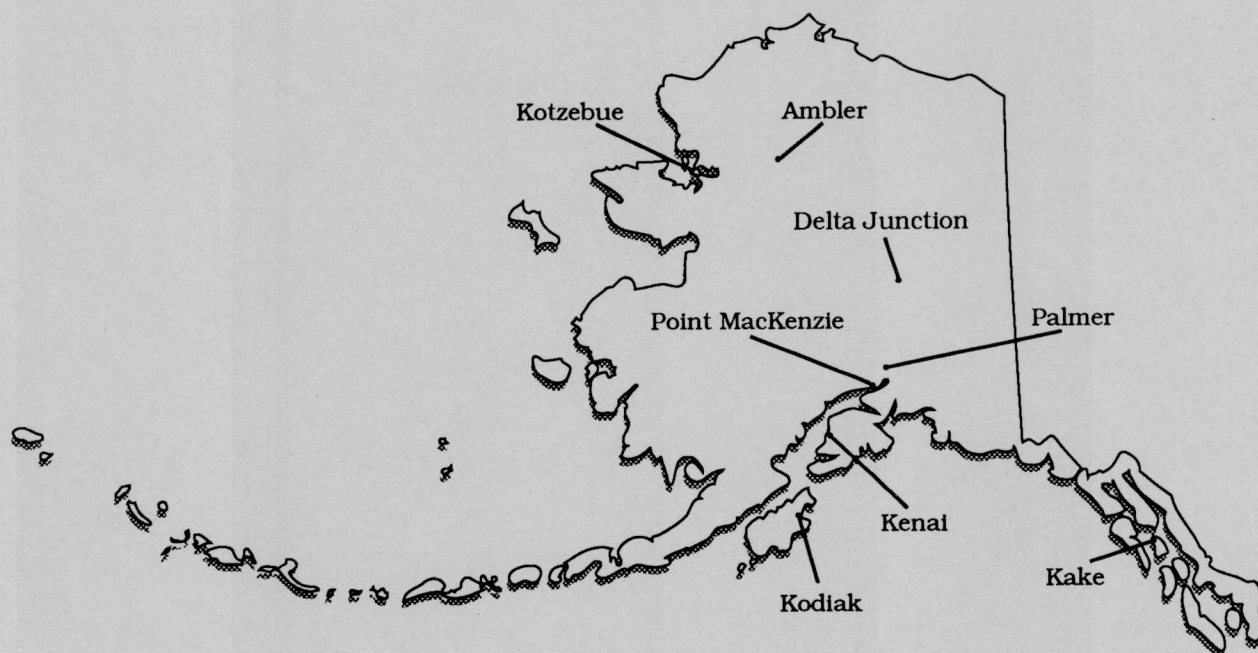
Location	No. of days from plant to harvest	Killing frost ¹	No. of days from plant to killing frost
Ambler	87	1 (27°F)	86
Delta Junction	99	5 (26°F)	95
Kake 1st, [2nd harvest]	117, [174] ²	0, [(25°F)] ²	117, [149] ²
Kenai	118	10 (30°F)	108
Kodiak	105	0	- ³
Kotzebue	87	5 (29°F)	82
Palmer	124	0	- ³
Point MacKenzie	118	0	- ³

¹ Number of days prior to harvest that killing frost occurred, followed in parenthesis by the actual temperature if it is known.

² Harvest done at 2 different times.

³ Killing frost did not occur prior to harvest.

Potato trial locations



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