NEBRASKA POTATO EYES

Keeping an Eye on the Nebraska Potato Industry

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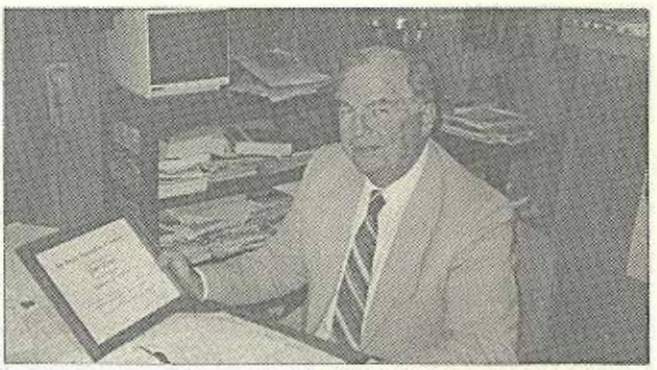
Extension Potato Specialist

As the growing season is ending, vine killing and harvesting is well under way. Early market reds and russets found high prices. Looking around the grocery stores, I saw high quality tablestocks from our potato growers (Chimney Rock, King's Choice, et al.). Although it's been a hectic season, I thank Jim Carlson, Lester and Don Fulk, Don Brown, Jack Hackersmith, and Larry Malm for visiting with me in Nebraska and Wyoming. I have enough information now to begin the pest NebGuides and present an overview of our potato industry at an upcoming meeting. I also extend my thanks to Jerry Michaud for his hospitality during my visit to Rocky Mountain Snacks. Special congratulation to Gene Shaver on being elected Vice President of the Potato Association of America and awarded an Honorary Life Membership. Read the following item.

Gene Shaver Honored by PAA

Robert B. O'Keefe
University of Nebraska, Scottsbluff



At their 1989 meeting, the Potato Association of America (PAA) awarded Gene Shaver of Scottsbluff, NE their highest award, Honorary Life Membership. Gene joins a very select group, which includes from Nebraska Dr. Harvey O. Werner (1954) and Warren Trank (1980). The following is the resume submitted for his nomination.

"Gene Shaver entered into his career in the potato industry in 1950 when he was employed by the Nebraska Certified Potato Growers and worked in the Foundation Seed Division as a roguer. In 1952, he was appointed District Manager of the warehouse in Hay Springs, Nebraska. In 1953, he formed the Howard McLean Potato Co. in partnership with Howard McLean, the former General Manager of the Nebraska Certified Potato Growers. He became President of the company when Howard retired. The company marketed washed red table potatoes and seed. Nebraska started producing chipping potatoes in the early 1960's. Gene was an early supporter of the program and one of the first to produce and market chipping potatoes. He has been a supporter of the University of Nebraska potato breeding program and a cooperator for many years. He was active in the development of the Nebraska Potato Council and has been President of the organization several times. He has been and is on the Potato Certification of Nebraska Board and served as President six times. He has been a member and Chairman of the Nebraska Potato Development Advisory Board, Dept. of Agriculture. Gene has been a member of the National Potato Council since the 1960's and was President in 1983. He proposed and was active in the devlopment of both the Chipping Potato and Seed Potato Seminars. He became a member of the National Potato Board in 1972 and returned to the Board from 1985-87. Gene joined the PAA in 1964 and became a Director in 1987. He formed the Shaver Seed Farms in 1967 and began to concentrate on seed production and strain development at that time. Strains of Norgold Russet, Haig, Superior, and Norland were developed and entered into the trade by him. In 1985, he formed Nation Wide Seed Sales as the marketing component for seed for the company.

Recognitions given to him include the National Potato Council President's Award and the Leadership and Service Award, the Meritorious Service Award from the National Potato Board, the Packer Potato Man of the Year, and service awards from the Boy Scouts of America and business and community groups.

Gene and Evelyn Shaver have four children - Jane, Kathy, Beth, and Scott."

Gene was also ELECTED Vice President of PAA at the 1989 meeting. Gene became a member of PAA in 1964, and he has served as Director in 1987-89. Previous positions held have included: President (1983) and Vice President (1982) of the National Potato Council (NPC), Chairman of the Nebraska Potato Certification Board, Director of Lockwood Corp. and First State Bank of Scottsbluff, and recipient of NPC's Gold Potato Award (1985). In accepting his Honorary Life Membership, Gene stated the need for more growers' participation in the PAA. He is now in charge of membership among other responsibilities. So don't be surprised if he calls you. Gene, CONGRATULATIONS! CONGRATULATIONS! CONGRATULATIONS!, THANK YOU for the many things that you've done for Nebraska potatoes.

Fertilization - NPK Rates

Alexander Pavlista
Extension Potato Specialist
University of Nebraska, Scottsbluff

On May 12, 1989, a Potato Growers meeting as part of the Nebraska Potato Council meeting was held at the Panhandle Research and Extension Center, Scottsbluff. Twenty-three people attended, mostly growers plus UNL and Dept. of Agriculture staff. The presentation given by Alex Pavlista, UNL, covered nitrogen, phosphorous and potassium rates for potatoes in Nebraska. Literature was searched and data presented from 1938 to 1989. Research data originated from across the USA and Canada and included many varieties.

The following tables summarize these researches:

Nitrogen Rates	Yield	Specific Gravity
0 to 150 #/a	Increase	No Change
150 to 400 #/a	No Change	Slight Decrease
400 #/a and above	Decrease	Decrease

Ammonium nitrate has less of an effect on specific gravity than Urea.

Phosphorous Rates	Yield	Specific Grav.
0 to 50 #/a	Increase	Slight Increase
50 #/a and above	No Change	No Change

0 to 100 #/a increases A sizes.

There are no differences between Superphosphate, Diammonium Phosphate and Monoammonium Phosphate.

Potassium Rates	Yield	Specific Grav.
0 to 80 #/a	Increase	Decrease
80 #/a and above	No Change *	Decrease

*Increase in A sizes due to water accumulation.

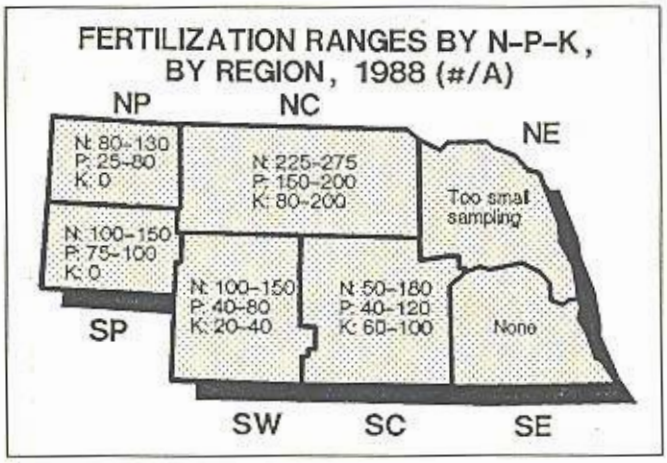
Sulfate has the least effect on specific gravity, then Nitrate. Chloride lowered specific gravity the most.

Without taking into account residual NPK in the soil, the following NPK applications were recommended:

	Table	Chip
N	50 to 150 #/a	50 to 150 #/a
P	50 to 100 #/a	25 to 75 #/a
K	60 to 100 #/a	40 to 80 #/a

N as ammonium nitrate for processing.
P - no recommendation.
K as potassium nitrate for processing.

Potatoes are grown throughout much of Nebraska. Tablestock, chips, fries, and seed are represented. The Panhandle accounts for 65% of the total acreage. I divided Nebraska into 7 regions. The map shows the current ranges of NPK applications in these regions.



Historical Seasonal Price Patterns for Potatoes

James G. Robb and Daryl E. Ellis
Extension Farm Management Specialist and Technician
Panhandle Research and Extension Center

Three time factors are usually considered in understanding and projecting prices -- seasonal, trend and cyclical. Irregular price movements are also important in agriculture, often weather causes substantial price deviations from "normal". Seasonal patterns describe how prices tend to behave within a marketing year. Trend and cyclical price factors depict long-term price patterns or how prices move across years. Seasonal price patterns give important insight for marketing decisions and developing cash flow projections.

Seasonal price patterns for crops arise because the supply is greatest at harvest and sometimes because of seasonality of demand which is often associated with holidays and climate. For storable commodities, a "classical" seasonal price pattern occurs when a crop is harvested during a short period of time and is then sold over the next 12 months. Typically, prices will be lowest at or just after harvest, then prices will tend to increase for several months, at some point during the year prices usually decline in anticipation of the subsequent crop. Potatoes are not as storable as many other crops and may have different seasonal price patterns than other commodities.

Historical Price Data

To develop seasonal price patterns, historical monthly prices are required throughout the year. Unfortunately, only average annual prices for Nebraska potatoes are estimated by the USDA. Monthly potato prices are reported for several other states including Colorado, Idaho and North Dakota. Very little historical price data is available which breaks down potato prices into important classes (eg. table stock, processing, color, etc).

For the seasonal price patterns calculated here, historical Colorado and North Dakota monthly prices were used. These prices are reported by the USDA as "prices received by growers" per cwt. Colorado prices were used to reflect the table stock or fresh potato market. North Dakota produces mostly chipping and seed potatoes, which are major uses of Nebraska potatoes.

Seasonal Price Indexes for Potatoes

Seasonal price patterns are usually described by a monthly index. An index summarizes historical prices. Interpreting index numbers is not difficult. For example, a monthly price index of 1.00 (or 100%) means that the price in that month tends to equal the average; an index of .90 (or 90%) means that the price in that month tends to be 10% lower than the average price for the year.

There are a number of ways to calculate seasonal price indexes. The method used here was implemented with a microcomputer program that we have developed and it has been used to estimate seasonal price patterns for several agricultural commodities. The technique used tends to remove long-term and irregular factors resulting in an average seasonal pattern.

Colorado Potatoes

Colorado potato seasonal price indexes are shown in Figure 1 for the last 5 and 10 years, on a calendar year basis. In the fresh potato market, price tends to be lowest in December and highest in August. During the last 10 years, Colorado potato prices averaged about 40% higher in August than in December and over the last 5 years, the difference between August and December prices has been even more dramatic.

The variability of Colorado seasonal potato prices is shown in indicated in Table 1 by the maximum (largest) and minimum (smallest) seasonal price index calculated for each month over the last 10 years. Potato prices are volatile, the seasonal price index for July shows the most variability.

North Dakota Potatoes

Seasonal price indexes for North Dakota potatoes are shown in Figure 2. For chipping and seed potatoes produced in North Dakota, price tends to be lowest in September and highest in March. In most years no potato prices are reported by North Dakota in July and August as few potatoes are still in storage. During the last 10 years, North Dakota potato prices averaged about 30% higher in March than in September.

Though still volatile, the variability of North Dakota potato prices is less than Colorado's, as indicated in Table 1 by the maximum and minimum seasonal price indexes over the last 10 years.

Using A Seasonal Price Index

Caution is required when using a seasonal price index to project prices. Information on current crop prospects in other producing regions, planted acreage, inventory in storage and other factors must be evaluated along with an understanding of historical patterns. If a farmer decides to store the crop based on expected price increases, the costs of storage including interest cost and spoilage must be considered. If a farmer decides to harvest a potato crop early, the lost yield must be evaluated against the potential for an early-crop price premium.

The following equation can be used to calculate the expected (seasonally adjusted) price change from the current month to a future month, using price indexes:

$$\frac{\textit{INDEX OF FUTURE MONTH} \times \textit{PRICE IN CURRENT MONTH}}{\textit{INDEX OF CURRENT MONTH}} = \textit{SEASONALLY ADJUSTED PRICE IN FUTURE MONTH}$$

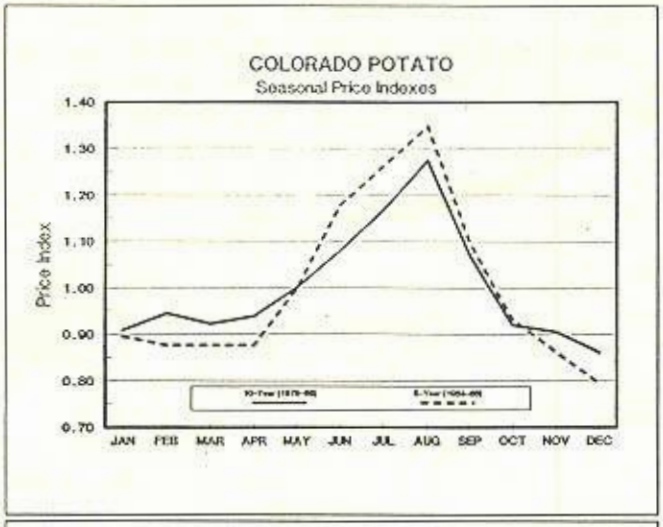
For example, if the September price of chipping potatoes is $8.00 per cwt, and the 10 year North Dakota seasonal price indexes are used (Figure 2), then the expected price in December would be calculated as follows:

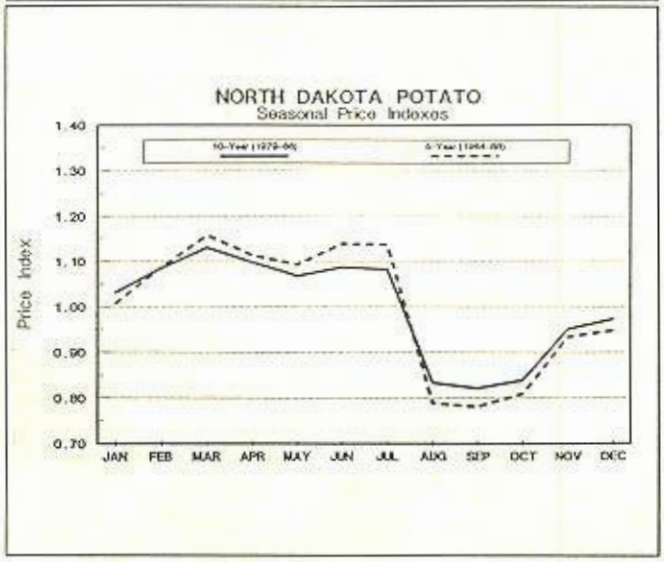
$$\frac{(.97 \times \$8.00)}{.82} = \$9.46 \text{ per cwt}$$

Again, note that factors other than seasonality may cause different prices in any particular year.

Table 1. Average, Maximum and Minimum Seasonal Price Indexes (10-Year, 1979-88)

	Colorado			North Dakota		
	Ave.	Max.	Min.	Ave.	Max.	Min.
J	.91	1.14	.75	1.03	1.22	.90
F	.95	1.17	.74	1.09	1.20	.91
M	.92	1.19	.67	1.13	1.33	1.00
A	.94	1.27	.64	1.10	1.43	.90
M	1.00	1.25	.66	1.07	1.34	.87
J	1.08	1.50	.73	1.09	1.61	.83
J	1.17	1.83	.68	1.08	1.62	.80
A	1.28	1.91	.89	.83	1.17	.61
S	1.07	1.47	.76	.82	1.08	.64
O	.92	1.29	.71	.84	.99	.63
N	.91	1.21	.61	.95	1.12	.76
D	.86	1.05	.52	.97	1.10	.86





SPUDDERS

Gary Leever
Potato Certification Association of Nebraska
Alliance, Nebraska

I don't know what year this was on the Chinese calendar but in the certified seed potato fields of Western Nebraska, this certainly was the year of the beetle. The Colorado Potato Beetle showed up in record numbers throughout our seed growing areas. However, larva population did not reach sufficient numbers to harm the plants until late in the season when vine kill was beginning. CPB could be a significant problem for us next year. Relatively few other insects were reported and aphid and leafhopper populations were very low.

Seed potato fields in Western Nebraska seem to have good growth and normal sets. Samples dug during third inspections, by Kent Sather and myself, seem to indicate the early planted fields were more adversely affected by the July blast furnace and will have slightly lower yields than later planted fields. Tuber quality looks fine except an unusual number of fields showed scab and sort out might be fairly heavy in some of those lots.

Rejected and withdrawn acres ran unusually high this year with 672 acres rejected and 354 withdrawn. For those of you who are facts and figure freaks, the total number of acres entered for certification in 1989 was 6,156 acres with 5,129 acres passing field inspections. 6,156 acres represent the most acres entered since 1950. 5,129 acres passing is the lowest total since 1985.

The final list of fields passing certification has been mailed to our seed growers and is available to anyone upon request. Florida test plot samples are due at our office by October 15. I hope you all enjoy a good harvest.

Wireworms in Potatoes

Gary L. Hein,
Extension Entomologist
Panhandle Research and Extension Center

Several wireworm species have the potential for causing damage in Nebraska potato fields. Wireworms are long (up to about an inch), slender worms that develop and feed in the soil. The larvae are distinctive in that they are yellow or brown and have a rather wirelike appearance. Wireworm adults are slender beetles known as click beetles. Wireworms damage potatoes by feeding on the seed pieces and shoots after planting. This feeding results in infected seed pieces, weakened plants and/or reduced stand. Late-season damage will result when larvae feed on the tubers causing feeding scars or feeding tunnels. This may result in reduced potato quality.

Complications dealing with wireworm life cycles and biology make wireworms a difficult insect pest with which to deal. Wireworms take about 3 or 4 years to complete development. Most of this time is spent in the larval stage in the soil. Larvae move up and down in the soil according to the temperature, and they may move as deep as 2 feet during cold periods. Wireworm damage is most likely the result of feeding by larvae that are 2 or more years old. In most situations larvae of several ages can be found in an infested field.

Adults are relatively common in the summer and are often attracted to lights at night. Their presence does not necessarily indicate future problems. Once mated, adult wireworms will seek egg-laying sites in grassy areas. These sites may be in pastures or other sod areas. For this reason wireworms are most likely to be a problem in fields that have recently been broken out of sod or other grass crop. Adults also may seek to deposit eggs in areas of cultivated fields where grassy weeds are a problem or in cereal crops. Because of these habits, growers need to be aware of not only the cropping history, but also the severity of grassy weed problems in all areas of a particular field. Fields with cereal cropping history, a history of grassy weed problems and newly cultivated soils need to be avoided to minimize wireworm problems.

Wireworms would likely cause significant problems in only a small proportion of the fields. Even in those fields

where they are present, wireworm damage will be spotty. Soil sampling and baiting are somewhat effective at determining if wireworms are present in fields to be planted to potatoes. Carrot pieces, wheat flour or germinating wheat seeds can be used to attract wireworm larvae into buried bait stations. Wireworms can be collected by sifting soil samples through window screen. Sampling and baiting must be carried out when soil temperatures are above 45-50 C to ensure that wireworms are active near the surface of the soil.

If soil sampling or baiting indicate a significant presence of wireworms, the options for wireworm control are to apply a preplant broadcast or planting-time application of an insecticide. Control of wireworms is difficult resulting in high use rates and incomplete control of damage. Broadcast options include: diazinon (AG500), Mocap (6EC, 10G, 15G, 20G), Dasanit 15G, and Dyfonate (4EC, 10G). Broadcast applications must be immediately incorporated into the upper 4-6 inches of soil. Planting-time band applications include: Mocap (6EC, 10G, 15G, 20G) and Thimet (15G, 20G). There are no registered post-planting applied insecticides for wireworm control. This is the result of the difficulty in trying to move the insecticide down into the soil in a high enough concentreation to obtain wireworm control. Where wireworm populations are very high and land cannot be rotated to a less sensitive crop than potatoes, soil fumigation is an option.

Vine Kill/Diquat

Alexander D. Pavlista
Extension Potato Specialist
University of Nebraska, Scottsbluff

In June, 1989, Valent USA, Corp. held their 3rd Diquat Seminar in Colorado. Potato researchers and extension staff were present from Colorado, Idaho, Maine, Michigan, Minnesota, Nebraska, North Dakota, Oregon, Washington, and Wisconsin. Valent staff representing technical service, field R&D and sales also participated. State reports as well as special research projects were presented. The following are summaries of these reports. The summaries are followed by the edited transcript with figures of the Nebraska report.

Highlights: Diquat

1. Diquat works better applied late in the day than earlier in the day, especially on clear days. Diquat has the opportunity to spread in the plant during the night before being activated by sunlight. Heavy dew decreases activity with morning applications.

2. Best results are at 20 to 50 gpa application. Below 5 gpa, poor coverage occurs; above 100 gpa, a dilution affect occurs.

3. The rate of X77 used does not affect Diquat performance. No difference was reported between using X77 or a crop oil such as Mor-act.

4. Diquat treatment had no effect on stem end discoloration, improved skin set, and may increase specific gravity during the first few weeks.

5. A 2 pt label is needed to eliminate split applications; 3 pt label is being considered for R. Burbanks only.

6. Drift or "chemical trespass" due to aerial application is becoming increasingly noticed and is becoming a problem.

State Reports:

CO (Gary Franc) - 90% of Colorado's potatoes are grown in the San Luis Valley. Centennial R. comprise 67%; R. Burbanks is 27%, and Sangre is 6% of the acreage. There is increasing interest in Norkotah and R. Nugget, a late maturing, difficult to kill variety. Organic growing is increasing due to market pressure. A need of a 2 pt/a label to eliminate split application was expressed.

ID (Lloyd Haderlie) - Potatoes for chips is rising and some R. Burbanks are going into chips. In 1988, more acreage was grown of varieties other than R. Burbanks than ever before. Sugar end problem in R. Burbanks was notable in 1987 and '88. Desiccation of some kind was used in 70-80% of the fields.

	Acreage ($x10^3$)	Cost ($/acre)
Total	330	--
Vine Killed	250	--
Flailing	100	10
Sulfuric acid[1]	65	22
Frost/Natural	35	0
Diquat[2]	35	20
Des-I-Cate[2]	15	26

[1] - most consistent and fastest
[2] - much use as combination

Vine Killing of R. Burbank by Diquat
Aerial Application

pt/a	Date Applied	% Vine Desiccation on 9/5	9/9	x	9/13	9/16
1+1	9/2, 9	52	57		83	90
1+2	9/2, 9	58	68		87	91
1+1+1	9/2,9,13	57	55		72	88
2	9/9				73	80
0	--	14	18		32	60

x - Frost occurred on 9/11

ME (Ed Plissey) - The potato industry is declining in this state. In 1952, there were 200,000 a, and, in 1988, this dropped to 50,000 a, lowest since 1876. 1988 was a dry year and vine kill was "tough". Early morning application of Diquat did not work well; heavy dew had a diluting effect. There is a concern over "drift management" due to commercial aerial application. Sulfuric acid is not used.

MI (Cliff Kohl/Richard Leep) - In the lower part of the state, 70% of the acreage (60,000) are chemically desiccated with Diquat. The major variety is R. Burbank. Diquat applied 1+2 pt/a was the most effective. Although Gromaxone Super at 1.3 pt/a gave the most rapid kill. Over a longer period Gromaxone and Diquat were about the same. Rolling vines before Diquat application was more effective than Diquat alone, but seed growers have no interest in rolling due to increased disease transmission.

NE (Alex Pavlista) - edited transcript follows

ND/MN (Duane Preston) - The Red River Valley (8 counties) grows process potatoes (50%), seed (25%) and tablestock (25%). Chip production is the largest portion of the potato industry. Normally, half the acreage is vine killed. The principle vine killer is Diquat; little Des-I-Cate is used; there is some use of sulfuric acid and rolling. Diquat plus oil is advantageous; coarse droplets are better, and ground application (20 to 30 gpa) was better than aerial. Diquat applied as 1 pt + 1 pt was not as good as 1+2 or 1+1+1 split applications. A 3 pt label for Pontiac, Shepody, Kennebec is desired in addition to Burbank. Desiccation with Diquat improved skin set and decreased skin loss due to mechanical handing.

OR (Steven James) - Norkotah, which is easy to kill is replacing Norgold. In the Columbian Basin, 85% of the acreage is for processing and is not desiccated. Of the desiccated acreage, half is desiccated by Diquat; the farmers seem to have no complaints. The popular experimental variety A74212-1 is difficult to kill.

WA (Gary Pelter) - Little desiccation is used on R. Burbank, the major variety. Fresh market potatoes are desiccated. Norgold are being replaced with Norkotahs. Diquat (1+1 split) and Diquat + Enquik (1 gal Diquat + 10 gal sulfuric acid in 50 to 100 gal per acre) are common desiccants. Aerial applications have stimulated concern over "chemical trespass".

WI (Larry Bunning) - Diquat is the vine killer. Some Des-I-Cate is used, but it has poor grower acceptance. No sulfuric acid is used; minimal mechanical kill. Due to drift problems ("chemical trespass"), aerial application of Diquat is nearly zero. Red potato market is increasing.

Special Reports:

Don Nelson (ND/MN) - Diquat vs. Time of Day

Varieties Norchip and Pontiac. Diquat at 1 to 2 pt/a; X77 at 1 to 2 pt/100 gal. Application times 11:30 a.m., 5:30 p.m., 9:00 p.m. on 8/9 and 8/17/88. 21 gpa at 35 psi using fan nozzles.

Conclusions: More kill occurred with Norchip than with Pontiac. Diquat at 2 pt/a was the most effective; there was no difference in X77 rates. On a clear day, application at 9 p.m. was more effective than at 5:30 p.m.; on a cloudy day there was no difference. Both evening applications were better than the 11:30 a.m. application.

	Diquat Rate, pt/a at 9:00 p.m.		
	0	1	2
Days after Application	% Desiccation		
1 day		5	30 50
8 days	20	50	80

8 Days after Diquat Application	Clear Day 11:30 a.m.		Cloudy Day 9:00 p.m.	
% Desiccation	50	80	70	85

Bob Thornton (WA) - Diquat Trial on R. Burbank

Diquat split application - 20 gpa at 30 psi.

Conclusions: 1+1 pt/a Diquat was more effective than 2 pt/a. For leaf desiccation, there was no difference between 1+1, 1+2, 1+1+1, and 2 pt/a Diquat. For stem kill, 1+2 pt/a was better than the other applications.

Lloyd Haderlie (ID) - Diquat and Additives

Vines rolled the day before Diquat application. Diquat applied in evening; no sun present. 18 gpa used.

Conclusions: Sulfuric acid gave most rapid kill. Diquat at 2 pt/a more effective than Diquat at 1 pt/a, but it is about the same as Des-I-Cate at 1.9 gpa. No difference occurred with X77 added at 0.05 pt/a to 1 pt/a; no difference between X77 and Mor-act, an oil, as additives. Diquat had no effect on stem end discoloration of R. Burbanks.

	Days after Application			
	2	5	9	13
	% Vine Desiccation			
Check	17	31	68	76
Sulfuric acid at 12 gpa	74	86	96	97
Des-I-Cate at 1.9 gpa	35	73	87	94
Diquat at 1 pt/a + X77	43	60	79	88
Diquat at 2 pt/a + X77	55	78	88	95
Des-I-Cate at 1.4 gpa + Diquat at 1 pt/a	50	68	81	91

X77 at 1 pt/a or 6 pt/100 gal

Diquat at 1 pt/a	Days after Application			
	2	5	9	13
No additive	17	31	68	76
+ X77 at 0.1 pt/a	38	61	79	89
+ X77 at 1.0 pt/a	43	60	79	88
+ Mor-act at 1 pt/a	45	66	86	93

X77 - nonionic sticker/spreader
Mor-act - oil

Leigh Morrow (ME) - Vine Kill Trials - Katahdin and R. Burbank

Conclusion: Diquat was more effective than Defol which, in turn, was more effective than Harvade. The addition of Cobra did not improve Diquat's performance. Diquat application at 20 gpa was better than at 50 gpa. Later in the day application improved vine kill. Des-I-Cate gave no advantage over Diquat. The most effective Diquat applications were 2+1 and 1+2 pt/a; 1+1 and 1+1+1 pt/a gave no advantage. Skinning was decreased by Diquat treatment.

Diquat at 1 pt/a + X77 at 8 oz/a	Time of Application 6:30 a.m.	1:30 p.m.	6:30 p.m.
% Stem Kill	19	23	40

Note: stems are harder to kill than leaves.

Steve James (OR) - Diquat and Skin Set

R. Burbank, 20 gpa at 32 psi, application at 10 a.m. on clear day.

Conclusion: There was no significant difference in leaf kill after 14 days between 0,1 and 2 pt/a Diquat. Diquat-treated plants had less #1 tuber yield and lowered specific gravity by 1 point in the first 5 days. Specific gravity recovered after 7 days. Diquat treatment lowered the amount of skinning after 7 days. Stem end discoloration was not affected by Diquat.

Jim Halderson (ID) - Tuber Maturity

Described a hand-held torque devise to measure skin set. After Diquat application, there was a 2 point per week increase in specific gravity. This was correlated with a tuber weight loss during the first 21 days after kill. After that time, there were no further changes.

Valent Reports:

Ray Henning (Technical Service) -

In the western states, Diquat is labelled at 1 pt/a in 20 to 100 gal for ground application and 1 pt/a in 5 to 10 gal for aerial application. At this rate, Diquat cannot be mixed with other desiccants. For R. Burbank only, there is a label of 2 pt/a in 20 to 100 gal. A 3 pt/a label is being investigated for R. Burbank; there is no current interest to label this rate on other varieties. The goal is a 2+1 pt/a application. The problem of drift when aerially applied is very much in the public eye and pressure on aerial application is expected to intensity.

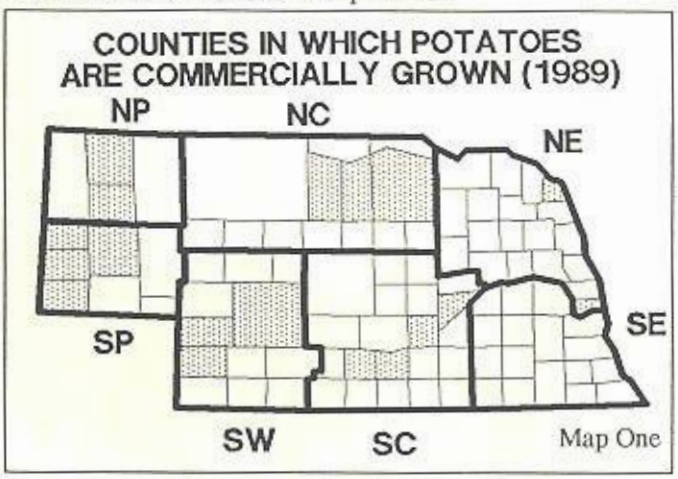
Kelly Luff (Field Research) -

A new product is available, Spotless, which is a triazole. Its current usage is for the control of powdery mildew. However, Spotless has plant growth regulator activity. In 1987 and '88 trials, it has increased yield, specific gravity and yield of larger sizes (above 10 oz).

Nebraska Report (Diquat Seminar)

Alexander Pavlista
Extension Potato Specialist
Univeristy of Nebraska - Scottsbluff

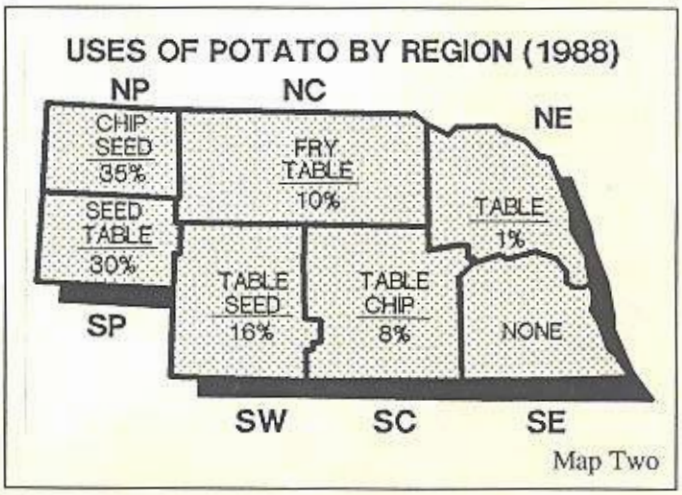
The Nebraska counties in which potatoes are grown are depicted in Map 1. These counties are distributed throughout the state. I've divided the state into 7 regions - North Panhandle (NP), South Panhandle (SP), South West (SW), South Central (SC), North Central (NC), North East (NE), and South East (SE). There are too few potato acres grown in the NE and SE to determine patterns.



Map One

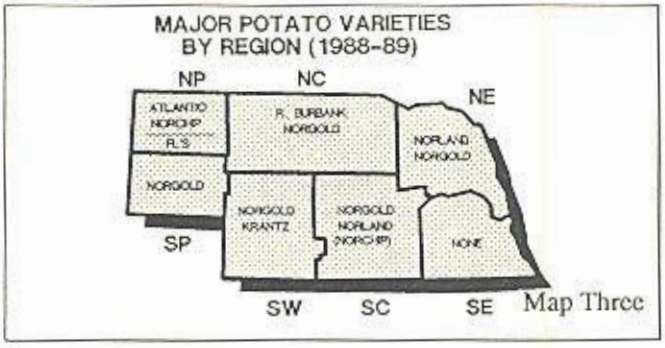
The potato industry is primarily divided into the remaining 5 areas. Most of the potatoes are grown in the Panhandle (NP, SP) which accounts for 65% of the state's total acreage. The regions differ from each other in soil pH, soil types, varieties, markets, fertilizers, etc.

In the NP, chipping potatoes are grown while, in the SP, tablestock and seed for the fresh market are the principle potatoes (Map 2). Tablestock is grown along the southern part of the state with some chippers grown in SC. In the northern part (NC), R. Burbank is primarily grown and used for french fries. This region has a potential for expansion. In 1989-90, there will be a decision on whether to increase acreage for french fry production and to build a processing plant.



Map Two

Looking at the principle varieties grown in these regions (Map 3), in the NP, Atlantic, Norchip and Frito Lay (FL) varieties are raised. These varieties are grown for chips as well as for seed. Among the tablestocks, Norgold dominates; Krantz is also popular. Among red varieties, Norland is the main variety. For the french fry industry, it's R. Bur-



Map Three

bank.

Some form of vine killing is used throughout the state (Table 1). Diquat is primarily used in the Panhandle. Vine killers are not largely used in the NC; natural die-off is allowed to occur. Other vine kill methods used are Gromaxone in the SW on tablestock. Sulfuric acid has been used on chippers in the NP and on tablestock in the south. There are also a lot of combinations such as, in the NP, Diquat, sulfuric acid and mechanical methods are used in all possible combinations. Calculating the percentage of acreage in each region using Diquat (Table 2), one determines that the SP is the primary user of this product. Diquat is also used in the NP and somewhat in the central regions.

Methods of Vine Kill	North Panhandle	South Panhandle	South West	South Central	North Central
Diquat	○	○		○	(○)
Gramoxone			•		
Sulfuric Acid	□		□		
Mechanical	■		■		
Flaming			△		
Natural				▲	▲
	○ + □ ○ + ■ □ + ■	○ + ■	• + □ • + ■	■ + ▲	

Table One

Growers want something to kill vines quickly and have expressed vine killing as a high priority item. The principle regions interested in Diquat and improved kill are the NP, SP and SW; together, these comprise over 80% of the state's acreage. Growers were asked of their concerns and comments on Diquat (Table 3). With chip producers, concerns are specific gravity, chip color and sugar level. Irrigation and nitrogen timing with vine kill is of interest to growers. Some growers add N up to a week before vine kill and others irrigate right through and after vine kill. This is an area where information is needed. There is a need to know more about how to apply Diquat, when to apply it and what is the relationship of Diquat, water and nitrogen.

	% acreage sprayed with Diquat	Vine Kill as high priority by growers	% potato acreage in Nebraska
North Panhandle	25%	100%	35%
South Panhandle	100%	76%	30%
South West	0%	70%	16%
South Central	20%	0%	8%
North Central	25%	0%	10%

NEBRASKA GROWERS' CONCERNS AND COMMENTS ABOUT DIQUAT	
	Specific Gravity
	Chip Color
	Sugar Level
	Irrigation Cutoff
	Nitrogen Cutoff
	Light Sensitivity
	Inconsistency
	Tank Mixing with Insecticides (Pydrin)
BOTTOM LINE:	quicker kill
	complete kill
	good tuber quality
	good tuber storeability

Table Three

Looking out for Nebraska's interests.
Alex Pavlista, University of Nebraska

EPA

Dinitro/Dinoseb Inventories Recall

Larry Schulze
Extension Pesticide Coordinator
IANR/University of Nebraska, Lincoln

The Nebraska Department of Environmental Control has announced a cooperative program with the Environmental Protection Agency to recall inventories of Dinoseb. Dinoseb usage has been suspended since 1986 and can no longer be used on potatoes. This recall is oriented primarily toward individuals who obtained the product with the original intent to use it on an agricultural or commercial crop.

The owner of the pesticide inventory stands the cost to package and transport Dinoseb to storage sites in Texas. At that point, the EPA picks up the material and completes the disposal process.

Persons owning this product and who wish to dispose of it should contact Ron Johnsen of the Department of Environmental Control at (402) 471-4217. The DEC will provide guidelines to owners of this product relating to packaging and shipment to the disposal sites.

NPC Activities/ Accomplishments

Ron Walker
General Manager
National Potato Council

The National Potato Council is the only national, non-profit, trade association working for the well-being of the U.S. potato producer and his industry. Since 1948, the NPC has constantly monitored and actively addresed the issues that affect you, the producer. Today 80 percent of the NPC's time is spent in the legislative, regulatory, and environmental arenas. Your active participation has molded the NPC into the viable and credible organization it is today.

During the 100th Congress, the NPC fought and won many battles. As a result of our effective presentation of the National Potato Research Prosposal, the discipline of maintaining priorities on a national basis, and the involvement of various NPC state memberships, the NPC has been successful in obtaining $1.2 million in funds for fiscal year 1988 and $650,000 in funds for fiscal year 1989. Additionally, funds for IR-4 and NAPIAP were restored. The NPC also supported the TEA program, which promotes exports in the face of trade barriers by foreign governments. The level of spending for TEA monies was maintained at $200 million.

Negotiations on the trade agreement between Canada and the U.S. establishing a Free Trade Area involved snags for the potato industry. Once it became clear politically that the FTA had enough votes to pass, the NPC enlisted the support of its Congressional members to propose to the Administration certain amendments that could be adopted. The NPC secured significant changes to the agreement in the following areas: 1) The agreement included specific language in its implementing legislation authorizing the U.S., to enter into negotiations with Canada for the purpose of considering quotas on potatoes; 2) The provision which would snap back tariffs to pre-existing levels was changed to ensure that the U.S. government would monitor trade between the two countries; and when the snap back forumla was reached, the government would make the recommendation to put the tariff back into place for a period of time; and 3) The implementing legislation was amended to require the U.S. to monitor the reduction of subsidies and non-tariff barriers within Canada and to work to eliminate these in the Uruguay Round.

In the international area the NPC lent its support to the U.S. Trade Representative and the USDA in urging the Korean government to remove its surveillance on frozen potato products. The NPC and its state members were successful in having the barrier removed prior to the Seoul Olympic Games.

Congress considered allowing military commissaries in Turkey to purchase domestic potato products. The NPC enlisted the support of its members and filed letters of protest with the House Armed Services Committee. Because of the input of the NPC, the Armed Services Committee panel rejected the petition; therefore, continuing to have the commissary use U.S. grown potato and potato products.

The PACA established an Industry Advisory Committee to review issues and focus on improvements to the PACA and its administration. The NPC successfully nominated both Louis Wysocki (WI) and David Long (WA) to this advisory committee. Messrs, Wysocki and Long will attend the meetings of the Industry Advisory Committee on behalf of the NPC and will work to identify and address NPC concerns with the PACA program.

The NPC was instrumental in working with other agricultural groups to ensure the last-minute repeal of the diesel fuel tax. The diesel fuel proposal, as part of the Miscellaneous Tax Bill, was considered a dead item until the NPC made an effort in urging other agricultural groups and members of Congress to resurrect and pass the repeal.

The NPC has been and will continue to be involved with FIFRA legislation, the Farm Bill as regards to protecting non-program crops, minimum wage legislation, mandated benefits legislation, transportation issues, ethanol, FUTA tax legislation, immigration, Section 89, occupational safety, as well as all the environmental concerns.

Congress will concentrate more than ever before on environmental issues during the 1990's. This means the NPC has to put on its armor and step into the field. Not only is the NPC deeply concerned about our environment, but we are also concerned about your having the tools necessary to do your job. To be victorious in this battle the NPC needs the support and unity of all its members, coordination and cooperation from the governmental agencies - EPA, USDA, and FDA, and the knowledge and expertise to be successful. This total synergism will keep the NPC triumphant.

Passages

New Face in Bridgeport

Alexander D. Pavlista
Extension Potato Specialist
University of Nebraska, Scottsbluff

George Hansen is the new Manager of West Nebraska Potato Shippers. George has lived in the Bridgeport area all his life, and grew up on the family ranch south of Broadwater. His potato experience began on his own farm between Bayard and Bridgeport. After selling his farm, George operated a feed and seed business. For the past 17 years, he has been the Plant Manager of the Panhandle Co-op Fertilizer Plant in Bridgeport. Fertilizer and chemical applications were his specialty.

George and Donna, his wife, have three children and four grandchildren. He is looking forward to a good potato harvest and the challenges of processing and marketing. Let us give George a warm welcome into the Nebraska potato industry. WELCOME!

Potato Outlook

Jim Robb
Extension Farm Management Specialist
Alexander Pavlista
Extension Potato Specialist
University of Nebraska, Scottsbluff

The following are excerpts from the August, 1989 Vegetable and Specialties: Situation and Outlook Report.

Prices and Demand--Despite strong price signals this past winter and spring, U.S. potato producers expanded planted area only fractionally in 1989

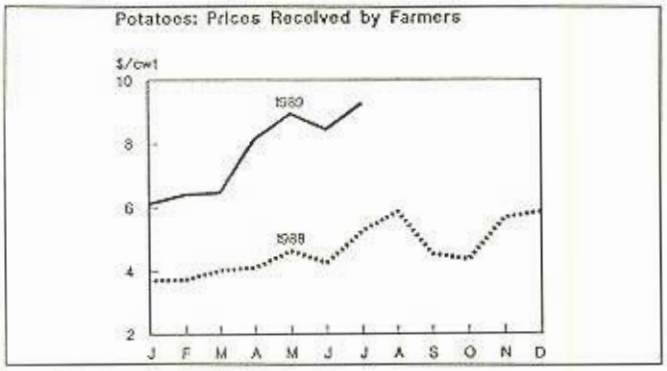


Fig. 1

Harvested acreage of fall potatoes is expected to total nearly 1.1 million acres. Yields will likely vary this season because many areas experienced adverse weather. Dry weather carried over from 1988 in the Red River Valley, again raising the possibility of yields well below trend. A June frost in parts of Idaho delayed growth for parts of the crop and could reduce tuber size. While North Dakota has experienced extreme heat, parts of New York and a few summer-crop States have experienced heavy rainfall that delayed crop planting this spring.

Grower prices for fresh and processed potatoes from January through July of this year have nearly doubled over those of the corresponding period last year. Potato prices in 1989 have been boosted by several factors, the most important being last year's 10-percent crop reduction. This decline tightened stocks in the face of relatively strong demand, especially for processing (largely freezing) potatoes. Another small contributor to price strength this year was the absence of significant increases in the winter, spring, and summer crops, and only a fractional increase in 1989 fall potato area. With supplies below those of 1988 and no price-busting production surge on the horizon, prices likely will remain above a year earlier through the coming fall harvest. Changes that have supported potato demand and grower prices include the following:

* The long decline in U.S. fresh potato use has stopped or at least slowed. Fresh use averaged 47 pounds per person from 1986 to 1988, about the same as in 1980 through 1982. Industry promotions and the convenience offered by microwave ovens appear to be important factors contributing to fresh use.

* Domestic frozen use has risen considerably during the decade--from 36 pounds in 1980 to 45 pounds in 1988. Continuing promotions of french fries by fast food establishments and the development of frozen microwave potato products have contributed to the upward trend in domestic frozen use.

* U.S. exports of frozen potatoes, especially french fries, have provided an expanding market. U.S. exports of frozen potatoes have risen from 84.5 million pounds (product weight) in calendar 1980 to 309.1 million pounds in 1988.

U.S. Vegetable Per Capita Utilization, 1988

Fresh Potatoes	14.5%
Frozen Potatoes	14.3%
Misc. Processed Potatoes	9.2%
Potato Total	38%
Fresh Tomatoes	5.2%
Canned Tomatoes	19.9%
Fresh Lettuce	7.0%
Misc. Fresh	17.1%
Misc. Canned/Dried	7.6%
Other Frozen	5.3%

Effects of the Triple Base Proposal on Planting Decisions for Potatoes and Dry Edible Beans

Paul C. Westcott and Glenn Zepp
Agricultural Economists
Economic Research Service, USDA

Abstract--Future farm legislation is considering a proposal to divide a farmer's acreage base for program crops into idled land, supported acreage that would remain planted with the program crop, and an unsupported third portion that could be planted with any permitted alternative crop. Analysis of net returns indicates that if this proposal were adopted, substantial economic incentives would encourage producers to shift unsupported program crop acreage into the production of potatoes and dry edible beans, provided they are approved for triple base plantings. This study focuses on potatoes and dry edible beans because they compete with program crops in the major production areas. Even small increases in the production of potatoes and dry edible beans could sharply reduce prices and revenues for producers of these crops.

Grower News: Babies

Barb and Kent Sather, congratulations on your new daughter, Kyla Marie. She joins her big sister, Julia. Kyla Marie weighed in at 7 lbs. on August 9.