

## Division of Agriculture Proposal for \$300,000 Seed Potato Funding

**Background:** During the 2013 Legislative Session, approximately \$300,000 for seed potatoes was re-appropriated to the Division of Agriculture for the FY14, FY15 budget cycle. The legislation included the following language:

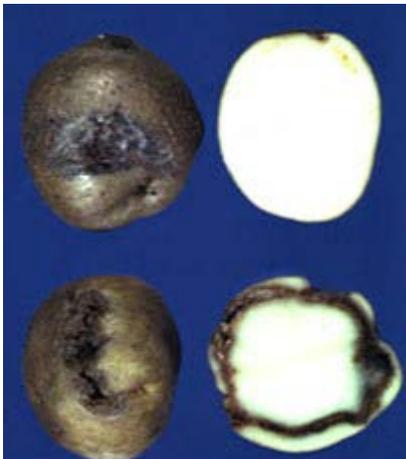
\*Sec 30. DEPARTMENT OF NATURAL RESOURCES. The unexpended and unobligated balance, estimated to be \$300,000 of the appropriation made in Sec. 24(b), ch. 5, FSSLA 2011 (Department of Commerce, Community, and Economic Development, Economic development, phytosanitary testing of seed potatoes through the University of Alaska Fairbank's Plant materials laboratory as required by the negotiated trade protocol with China - \$600,000) is re-appropriated to the Department of Natural Resources, division of agriculture, plant materials center, for seed potato testing, promotion, and education for the purposes of potato export for the fiscal years ending June 30, 2014 and June 30, 2015. (Chapter 16 SLA 13)

Seed potatoes are regulated as diseases can be carried in or on potatoes used for planting. 11 AAC 34.075(j) requires that all seed potatoes sold must be certified.

Clean seed stock is essential for the potato industry. Generation 0 seed is produced at the Plant Materials Center (PMC) and purchased by potato growers for increase. The Alaska Seed Potato Certification Program requires visual inspection of fields and storage lots to assure that the seed is within the allowable disease tolerances as outlined in the certification program. Certification assures that the seed has been visually inspected and met the disease tolerances at time of inspection; however, certification does not constitute a guarantee or warranty. Since 1986, the Department of Natural Resources (DNR) has delegated the responsibility for state certification to Alaska Seed Growers, Inc. (ASGI); however, ASGI has given notice and has passed certification authority back to DNR, as of January 1, 2014.

Seed that is exported to other countries may require additional testing for diseases of concern.

### Diseases of Concern for the Potato Industry:



*Bacterial Ring Rot (BRR)* continues to appear on Alaskan potato farms. The disease is called "bacterial ring rot" because the rot appears in the vascular ring of the potato tuber. In severely affected tubers, the vascular ring is brown to black in color, often with cheesy or creamy ooze and many hollow spaces where the flesh has disintegrated. Once a crop or farm is infested with the bacterium, the disease can carry over from year-to-year and can spread quickly. Even with intense sanitation efforts, the bacteria can be difficult to fully eliminate as the bacteria can survive many years in dried slime, on the surface of machinery, crates, bins or burlap sacking, even if frozen. Direct losses result from yield reduction due to wilt, stunting and tuber rotting in fields and storage.

In the late 1980's, this disease was widespread in Alaska and it was during this time that the PMC potato program was born. Since inception, the potato program has worked closely with Alaska's potato producers to manage/minimize the disease on table stock farms and eliminate it from seed farms. Currently, the Division has not found BRR in Alaska's seed potatoes; however, testing has verified BRR on table-stock farms.

Other diseases of concern include:

- Potato Virus X (PVX)
- Potato Virus Y (PVY)
- Potato leaf roll virus (PLRV)

**Proposal for Funding: Latent** Diseases can create significant economic losses for producers. The Division of Agriculture proposes to utilize this funding to address the various diseases that may inhibit in-state producers from exporting seed potatoes from Alaska.

**1) Purchase of a real time polymerase chain reaction (PCR) system for disease scoping assessment:**

In an effort to increase management of the disease, the division proposes to increase testing on existing seed and purchase a real time PCR system. This particular machine is used for the detection of disease-causing organisms in plants and is able to simultaneously test for multiple organisms that affect plants. The PMC will increase testing for BRR and diseases of concern on seed entered for certification. With this equipment, the Division will work with the potato industry and scope Alaska potato fields for diseases of concern. The results from this information will provide the basis for creating a management plan for the health of the State's seed crop.

Estimated costs associated with the machine and its operation:

Equipment: RTPCR machine	\$25,000
Training	\$ 4,000
Supplies	\$ 8,000
Elisa kits	\$24,000/ 2 year
Labor	<u>\$36,000/ 2 year</u>
<b>TOTAL:</b>	<b>\$97,000</b>

**2) Conduct Research:**

The Division of Agriculture would like to conduct a two year research project in cooperation with the University of Alaska, Experiment Station. The project will include planting several varieties inoculated with BRR with the purpose of conducting field examinations to better understand the systemic expressions of BRR in the field. BRR has the reputation of not expressing symptoms due to latency or weather. This controlled planning of inoculated seed would allow for determining what

symptoms or lack of symptoms an inspector or producer can expect. This project will also serve as an education opportunity for both growers and inspectors to become more familiar with the visual signs of BRR expression in Alaska.

**Labor costs** **\$20,000**

**3) Seed lot trials to be performed at UAF Trunk road:**

The Division of Agriculture, in cooperation with the University of Alaska, Experiment station proposes a two year project in which samples would be taken from all commercial seed lots for planting and disease observation. , Samples would range from 10 to 400 tubers per lot, with participation of an estimated 400 lots. The controlled planting would be readily accessible and near a laboratory in Palmer.

Land rent	\$24,000
Lab Space	\$ 8,000 (4 months @ \$1000/month X 2 yrs)
Labor	<u>\$ 6,000</u>
<b>TOTAL:</b>	<b>\$38,000</b>

**4) Perform Outreach & Education:**

The Division of Agriculture would like to host a Potato Conference/Workshop. Alaska's potato growers lack the infrastructure of local experts that other potato growing areas have. Funding travel for known experts to travel to Alaska and make presentations of science would dispel many of the myths and misconceptions currently in Alaska.

**Travel** **\$15,000**

**5) Fund participation in the National Potato Board meetings:**

The National Potato Board Export Marketing Committee is the United States' potato marketing group sponsored through assessments paid by all potato farms in the US. This group has investigated the potential export market for U.S. Seed potatoes along with other potato products for the past twenty years. Aligning Alaska with this group would help identify markets and enable utilizing their existing infrastructure.

**Travel/membership dues** **\$5,000**

**6) Perform an economic analysis:**

The market potential for Alaska's seed potatoes has been touted, but no economic analysis has been done. The McDowell Group published a market analysis in November 2001 that can be used as a starting point to develop a business plan and provide some economic reality to the cost of production and marketing of Alaska seed potatoes both nationally and internationally.

**Economic Analysis cost** **\$5,000**

- 7) **The Division of Agriculture will work with the Office of International Trade to explore potential markets for the seed potato industry.**

**Cost is unknown at this time**

- 8) **Provide training opportunities for field identification of disease symptoms:**

Field identification of disease symptoms requires extensive training and this work was previously done in cooperation with the ASGI. Typically a certification inspector is apprenticed for two to three years before being allowed to work alone. Several plantings are done in the USA (Washington State seed lot source trials, Oregon State University seed lot trials, various winter grow-out trials) that provide a training opportunity in disease identification for division staff.

**Travel** **\$20,000**

- 9) **Upgrade the PMC's production greenhouse:**

The existing greenhouse at the PMC does not meet national standards and requires the following upgrades: Insect proofing, environmental controls, concrete flooring, and double door entry.

**Cost of improvements** **\$36,000**

- 10) **Upgrade the PMC's seed potato production systems:**

The PMC presently uses 2 gallon pots and a potting soil system. Hydroponic seed potato production systems have been developed that are more efficient than the current system. It is estimated that the cost of the new system would be recouped in less than four years.

**Hydroponic system** **\$20,000**

- 11) **Upgrade the Potato Storage unit:**

The existing refrigeration units are 30 years old. Better shelving, humidification capabilities, and a low temperature monitor system would improve the quality of the stored product.

**Cost** **\$15,000**

- 12) **Provide growers with variety Clean up:**

The Division proposes offering variety clean up on a cost share basis to growers. The University of Idaho can eliminate pathogens from currently diseased stocks that are in demand by Alaskan growers. Clean stock would allow Alaskan growers to comply with certification requirements.

**Cost/variety** **\$15,000 (10 varieties)**

**Conclusion:** Utilizing the appropriation in the above manner will improve the health of the potato industry in Alaska.

Account 72000 - Travel	=	\$40,000.00
Account 73000 – Services	=	\$118,000.00
Account 74000 – Commodities	=	\$32,000.00
Account 75000 – Equipment	=	\$96,000.00

**TOTAL COST OF PROPOSAL: \$286,000**