



Potato Progress

Research and Extension for Washington's Potato Industry

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Specialty Potatoes for the Pacific Northwest

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The term "specialty potatoes" refers to potatoes that are not considered mainstream in the potato industry. Generally these potatoes have unusual characteristics such as yellow flesh, red or purple flesh or skin, small size or odd shapes. Fingerlings are a sub-group of specialty potatoes characterized by their small size. Specialty potatoes are generally limited in availability in terms of both seed and commercial production, and most production of both is in the hands of a few small-scale entrepreneurs.

Cultivars

Specialty potato cultivars have originated from a variety of sources. Some have heirloom importance and, in some instances, an historical importance in a particular area. Old European cultivars, such as Alpha, Bintje, and Maris Piper, have been grown commercially in the Pacific Northwest. Newer European cultivars, such as Penta, Molli, and Crispin, have recently become popular in our region. Cultivars released from breeding programs in the U.S. and Canada are also available, a prime example of which is Yukon Gold.

Yukon Gold is now grown on such a large scale that marketing of this cultivar can be considered standard fresh market, with large acreages and holdings in fresh market packers' storages. Cultivars, such as Penta, with similar characteristics are sometimes grown and marketed as Yukon Gold. The number of specialty potato cultivars and their seed acreage have increased dramatically over the past decade. In 2000, more than 5600 acres of Yukon Gold as seed potatoes were approved in the United States and Canada (Table1). This represents an increase of over 34% over the 1995 acreage for this cultivar and an increase of nearly 500% since 1990.

The cultivars listed in Table 1 are grown primarily for fresh market. However, mainstream buyers, such as the frozen and dry snack processing industry are becoming more interested, and are experimenting with products made from specialty potatoes. Red and blue potato chips made by snack food processors have recently found a small niche market.

Furthermore, many specialty potatoes have high levels of carotenoids and anthocyanins that increase the antioxidant value of potato in the human diet. There is also an ever-growing interest on the part of the home gardener in potatoes with functional attributes. Supplying the home gardener, however, requires developing infrastructure for processing numerous small-scale sales.

Table 1. Specialty potato seed acreage approved in the United States and Canada.

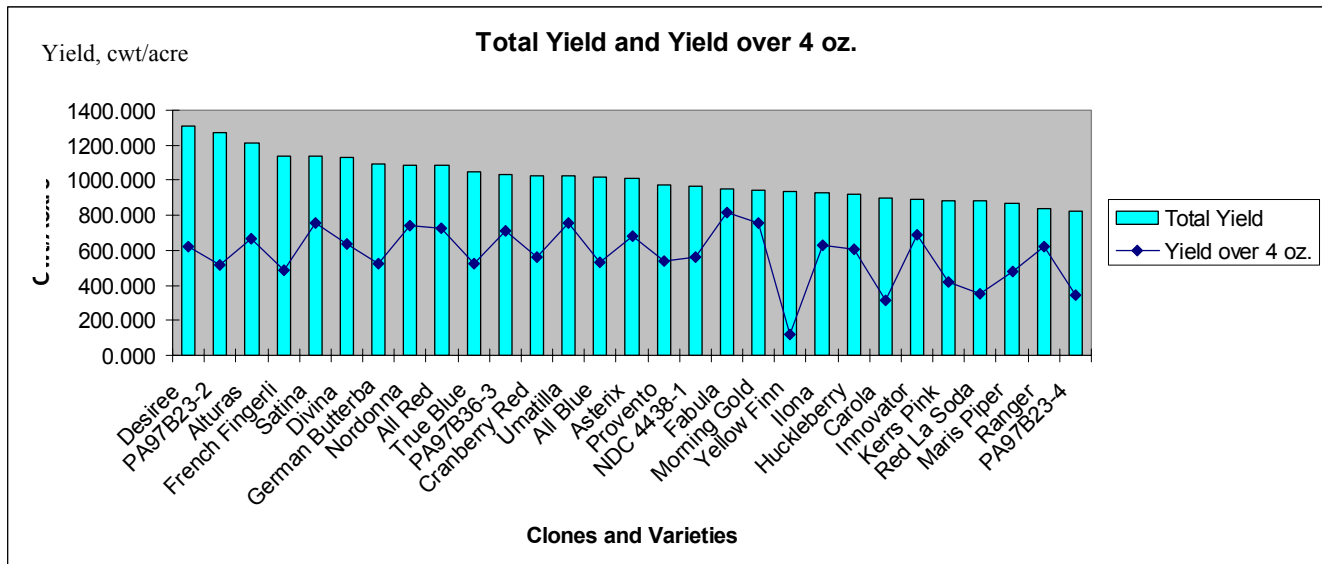
Cultivar	Seed Acreage Approved		
	2000	1995	1990
Yukon Gold	5606	4172	948
Penta	1575	238	0
Alpha	854	196	11
Molli	607	0	0
German Butterball	305	0	0
Crispin	260	0	0
Estima	91	104	0
Maris Piper	64	0	0
Valisa	57	0	0
All Blue	52	0	0
Keuka Gold	47	0	0
Carola	37	33	0
Yellow Finn	35	45	41
Bettina	0	205	0
Bintje	0	134	77

Source: National Potato Council Yearbooks (2001, 1996, 1991).

2002 Trials

In 2002, we conducted a yield trial at the USDA/ARS Systems Research Site near Paterson, Washington. The trial included standard varieties, experimental clones with anthocyanin and carotenoid pigmented flesh and specialty potatoes available from various commercial sources. Total yield and yield of tubers over 4 ounces of 29 entries is given in Figure 1.

Figure 1. Total yield and yield of tubers over 4 ounces, Patterson, WA, 2002.



Among the cultivars grown in 2002, Desiree, an older European cultivar, had the highest total yield. Interestingly the second highest yield was with PA97B23-2, a red-fleshed clone coming out of the Prosser, USDA/ARS breeding program. Alturas, a standard russet type potato, ranked third for total yield. The results of the 2002 trial show that it is possible to obtain yields comparable to what growers are accustomed to in this intensive farming example. Fabula and Morning Gold, newer cultivars from

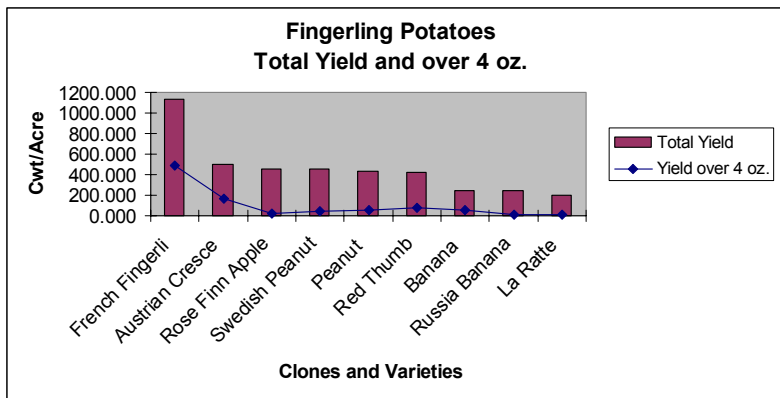
Germany and Canada, respectively, have the greatest yield of over 4 ounce tubers. Yukon Gold ranked 35th in total yield and 26th in yield of over 4 oz. in this trial, 680 and 520 cwt/acre, respectively.

With specialty potatoes, as with standard potatoes, quality, especially appearance, is as important as yield. From the standpoint of favorable appearance, including an attractive skin and tuber shape, German Butterball and French Fingerling were outstanding performers.

The fact that French Fingerling had less than half of the yield and German Butterball slightly more than half in the over 4 ounce category will probably not impair the profitability of these two varieties as smaller size is a desirable market class. French Fingerling falls into the category of so-called “fingerling” varieties that are prized especially in the restaurant trade for the small size and elongated shape.

Focusing on the fingerling component of our yield trial, we see that total yield and yield over 4 ounce was at a much lower level. Total yield and yield of tubers over 4 ounces of 9 fingerling potatoes are given in Figure 2.

Figure 2. Total yield and yield of tubers over 4 ounces of fingerling potatoes, Patterson, WA, 2002.



A small proportion of the fingerlings is in the over 4 ounce category for all fingerling types (with the exception of French Fingerling). However, these varieties are not intended to be graded by standard fresh market rules. They are prized for their attractive exterior and for their good eating quality. Buyers of specialty potatoes often ask for fingerling varieties by name without regard to their agronomic performance or lack thereof.

Markets

At this point the lure of specialty potatoes is obvious; their value is potentially very high. However, marketing is a chancy affair that does not follow standard routes, often dependent on intermittent sales to larger supermarket chains, and access to farmers’ markets that in turn require tremendous time and travel commitments.

With the exception of fingerling potatoes, which require special harvesting and handling techniques, the cost of production for specialty potatoes is not necessarily higher than that of standard potato types. Resistance to diseases is available in some cultivars. However, availability of quality seed tubers can be a problem. There is no stable pricing, but prices of seed in 2003 ranged from \$1.50 to \$3.00 per pound.

Many consumers have bought specialty potatoes at farmers’ markets. Specialty potatoes are also available at grocery stores in the Pacific Northwest. Grocery stores usually have only Yukon Gold and occasional stocks of All Blue, Yellow Finn, and Banana. The price may be \$250 per hundredweight, but the market is easily saturated. A dramatic increase in production could easily cause a surplus and diminish the favorable price structure.

Interest in specialty potatoes should be tempered by the knowledge that marketing is not-easy, and if many growers jump on the same bandwagon an oversupply may result. Among the specialty potato types, cultivars with yellow skin and flesh have the widest appeal. Yukon Gold is such a cultivar. Large-scale growers occasionally plant this cultivar. A grower used to large-scale operations may want to think twice about producing a large quantity of any specialty potato without a contract from a buyer. Other types of specialty potatoes should be explored by small-scale growers interested in taking advantage of smaller niche markets.

Potato Conference Topics/Speakers

If you have a particular topic that you would like to have covered at the annual Potato Conference in Moses Lake, we want to hear from you. We are currently gathering topic ideas from scientists and from industry. If you have a topic of interest, but not a speaker who can cover it, please let us know anyway. We can likely locate a person knowledgeable in that area. All topics received by September 30 will be considered by the program committee, which prepares the conference agenda. If you have a topic to suggest, please call or e-mail Andrew Jensen at the potato commission (ajensen@potatoes.com) or Gary Pelter with WSU Cooperative Extension (509-754-2011 ext 413).

Mustard Green Manure Field Day

Andy McGuire with WSU Grant/Adams Extension is planning the annual **Mustard Green Manure Field Day for October 23rd, 2003**. All those interested in green manures for soil improvement, disease control, or erosion management should plan to attend this field day. Topics covered will include variety trials, planting date trials, incorporation techniques, etc. For more information, watch future editions of *Potato Progress* or contact Andy McGuire at 509-754-2011 ext 413 or amcguire@wsu.edu.

Amplify Sprout Inhibitor Finally Registered

Aceto Agricultural Chemicals Corporation recently announced the registration of its new sprout inhibitor. The product will be sold under the trade name Amplify. The active ingredient is 2, 6-Diisopropylnaphthalene. Amplify acts as a plant growth regulator. It is intended to be used in storage facilities with recirculating air systems. It can be applied with conventional thermal fogging equipment during the natural dormancy period before sprouting occurs. Research data have shown that a good fit for this product will be in combination with CIPC (i.e. chlorpropham). The combination treatment should result in equal sprout control but lower residues of CIPC. Reduced CIPC residues will help ensure continued access to our overseas markets, many of which are lowering their allowable residues of CIPC on imported product. For complete directions and precautionary statements, please refer to the Amplify label.

Chlorine Dioxide Products Receive Federal Registrations

After several years of Section 18 labels coordinated by the WSPC, the two chlorine dioxide products used on potatoes in storage, Purogene and Anthium AGP, have received federal registration. These products are applied to potatoes going into storage or through the humidification system in storage. Both products should be available under their new federal labels soon.