

## FEASIBILITY OF ALTERNATIVE PACKAGING FORMATS FOR NOVA SCOTIA WILD BLUEBERRIES

### - Project Summary and Recommendations - March 2022

A food safety risk investigation was conducted by sampling at several wild blueberry farms across Nova Scotia (2021 season). Packaging options were investigated with shelf life, sustainability and marketing in mind. The following is a brief summary. A full report is available through the Wild Blueberry Producers' Association of Nova Scotia.

#### Food Safety:

- Attention to harvesting and handling procedures as well as sanitation is recommended to reduce food safety risks and improve quality and shelf life.
- See Perennia's Safe Food for Canadians Good Agricultural Practices Guide for detailed information including checklists, forms and guidance on topics like sanitation, guidance for traceability and environmental swabbing plans. Following the Safe Food for Canadians Regulations (SFCR) is essential for anyone exporting out of the province, and this information is also very useful for businesses looking to grow into new markets.
- Irrespective of harvest method, late season samples had significantly lower microbial levels. This may be due to cooler weather during harvesting, as early samples were taken on very hot and humid days.
- Compared to berries collected by traditional mechanical harvesters, gentle harvesting methods generally help to reduce microbial loads on berries entering processing line.
- Dry sorting berries appears to further lower numbers on the final product which is a good sign.
- No pathogens were detected in 384 berry samples.
- Indicator organisms (coliforms, non-pathogenic E. coli) did appear in final product samples occasionally, underscoring the fact that the potential is there for contamination by human pathogens and there is room for improvement.
- Attention to a clear procedure for avoiding and dealing with wildlife droppings is essential.
- Sanitation of food contact surfaces such as belts should have three steps: removal of debris, cleaning and sanitizing. Talk to a food grade chemical

supplier and/or Perennia's food safety team about developing your sanitation plan and verifying its effectiveness.

- Proper lighting over sorting belts can help ensure quality - a minimum level of 540 lux is required.
- Blueberry sizers showed evidence of incomplete cleaning and may require extra attention and a specialized plan for sanitation.
- Field lugs are another area for improvement (some carried organic matter even when cleaned, one of which tested positive for *Listeria monocytogenes*).
- Harvesters also require regular cleaning.
- Temperature has been highlighted as a major area for improvement. Rapid removal of field heat and keeping berries at a steady (low) temperature will improve shelf life.
- If freezing boxes, freeze on racking with good air circulation prior to palletizing.
- "Wash berries before using" and "Keep refrigerated" message on packaging would be a good reminder for consumers.
- Training for staff is important so all are clear on procedures and protocols.

#### Packaging:

- Our world is moving towards sustainable packaging and this is what consumers want – use compostable or readily recyclable types of plastic (#1-PET, #2-HDPE, #4-LDPE, and to some extent #5-PP) and move away from multi-layer or problematic plastics (#6-PS, #7- other or multi-layer pouches). Where possible ask your supplier for post-consumer recycled (PCR) options.

- Biowax (“Enviroshield” or other brand) is the best option for cardboard – it is fully recyclable and has similar or better cost / performance.
- The current 5 lb box has some advantages but a smaller option and possibly different materials may provide better margins and convenience to consumers.
- Options include a smaller version of the existing biowax cardboard, PET plastic clamshell (built in cover; would likely require an absorbent pad), fibreboard, sugarcane, or paperboard. The last three options can be available with lidding area for either a cover or film.
- Retailers are looking for berries to be covered so a lid or lidding film will be required in larger stores.
- For frozen fruit, in addition to current cardboard boxes, tubs, or stand-up pouch, a new format is being packed by Knol Farms – 6x57g PE bags in a paperboard box (Knol Farms can co-pack for other growers).
- If using stand-up pouches, ask your supplier about the 100% PE fully recyclable materials. This “mono-material” pouch is cost-competitive with traditional multi-layer pouches, has similar performance but is completely recyclable unlike multi-layer options.
- Fresh wild blueberries could have shelf life extended by using a modified atmosphere package (MAP) where carbon dioxide (CO<sub>2</sub>) is elevated to 8-10% inside the package to slow respiration and delay senescence. However, before this could be seriously considered, better temperature control would be required from the time of harvest throughout distribution and storage. For example, removal of field heat to 10°C for sorting and further cooling / maintenance of temperatures to 0- 4°C are recommended.



## Marketing:

- There is no doubt wild blueberries have a good reputation with consumers and customers for being a tasty, healthy, natural product. Unfortunately, there are many other items that could be described with these attributes. We need to offer the product in formats consumers are looking for today, build value for the product and tell the story that differentiates wild blueberries.
- Success in this industry requires you can satisfy the next two stages of the value chain: customers and consumers. Customers are the retailers who purchase your products for their stores and consumers are the end users who take your products home to their family. If you are selling direct you only need to satisfy the needs of consumers.
- One change in our food industry since the onset of the pandemic has been that the market puts a greater value on food. Consumers have more interest in a sustainable, viable food industry that is produced close to home.
- Changing the economic model also requires a change in mindset with producers. If you decide to take on this challenge, several areas of your business will require adjustments. If you are selling fresh and/ or frozen product in consumer packages you must create value.
- Developing options for wild blueberries requires that we consider what consumers today and into the future are looking for. We must also take into consideration how the products will compete within the category. This is where consumers make the decision to buy, and we need to create products and a strategy that is executed, to win at the shelf.

## Fresh wild blueberries

- There is demand from consumers and customers for the product. One producer does not have to meet 100% of the demand from retailers. They are willing to work with the volumes that would be available.
- There is room in the category for fresh wild blueberries in a 9oz package. This should be recyclable and/or compostable packaging with a lid that delivers a minimum of 10-12 days of shelf life. A flat containing 12 packages should return \$30.00 (\$4.44/lb) to the producer.
- Consider a common label for N.S. fresh wild blueberries where producers must commit to meet or exceed an established grade. This would allow for

more effective marketing efforts through a very short season. One person could coordinate volume from different growers into retailers.

- The program for this product should be developed with each retail customer 6 months prior to the season starting. The program would include estimates for volume, pricing, start and finish dates and promotion activity.

### Frozen wild blueberries

- We know frozen wild blueberries are in the market now, in consumer sizes. The control label and branded product from N.S. processors are in the grocery department. If there is to be a new offering, we must differentiate the offering.
- A 454g recyclable package would position the offering between the smaller sized control label and other larger packages. It would also ensure there was an attractive retail with a premium for wild blueberries that is reasonable.
- Pursue the fresh/frozen model. This method delivers a unique product and one that fits the story of N.S. wild blueberries. This is also another point of differentiation from all of the other frozen fruit SKUS.
- Explore the opportunity of merchandising this product in the produce department. Most retailers prefer to focus on fresh produce but there might be enough unique features of "fresh/frozen wild N.S. blueberries" to entice them to consider this merchandising strategy.
- One SKU can be a challenge. Consumers like to have some choice and the mixed fruit products in the frozen section get more facings which usually means they sell more. If possible 1 to 2 additional SKUS of mixed fruit would be beneficial to the program. The ideal would be to say wild but this might not be realistic from a product availability perspective. If possible N.S. strawberries, raspberries, blackberries or cranberries would be options to mix with wild blueberries.

### Telling the story

- Consumer marketing needs to focus on where the product will be available and the benefits it delivers to the defined target market. Often, we see consumer marketing focused on the product features. In the case of frozen N.S. wild blueberries this would be wild, antioxidants, local, versatility, portability and taste. The most effective consumer marketing turns those features into benefits for the target market.
- Sustainable production and packaging can be part of the story. The product is produced without a lot of the inputs required in conventional agriculture. The soil is preserved as opposed to tilled.
- Consumers want to know who is producing their food. This can be photos of producers on packaging, social media and mass media. Organized public relations prior to the season can be powerful to let people know the product is coming soon and where to find it.

**Thank you to all participating farms and to our partners Nova Scotia Department of Agriculture and Agriculture and Agri-Food Canada for their support. For more information please see full reports available through WBPANS or contact Nancy Tregunno at Perennia ([ntregunno@perennia.ca](mailto:ntregunno@perennia.ca))**