

Talking Technology

The first non-browning apple

By Steve Burns, Capital News contributor

As I mentioned last week, the Okanagan Valley has an emerging biotechnology industry cluster that deserves more attention.

While the industry is still in its infancy in the Okanagan, with the right mix of qualified research personnel, access to local university-based research programs, continued support from the National Research Council's research programs, increased access to early stage growth funding and a focus on an economic strategy to attract other biotechnology firms, the Okanagan is well positioned to become a thriving incubator for this emerging industry.



Last week we looked more closely at the size of B.C.'s biotechnology industry, which is one of the fastest-growing research communities in the world.

We also looked at a unique company in the Okanagan, AgriForest Bio-Technologies Ltd. (www.-agriforestbiotech.com), which uses their patented technology to produce over a million cultured plants a year for nurseries, garden centres and orchards across the country.

The company is now one of the largest producers of tissue cultured plants in Canada.

This week we are looking more closely at Okanagan Biotechnology Inc. (www.okanaganbiotechnology.com).

This company is equally interesting as it is focused on developing new commercial tree fruit varieties.

A unique example of innovative science and technology happening in the Valley is Okanagan Biotechnology's non-browning apple, which seems to describe the impossible innovation.

How does a company create an apple variety that does not brown when cut or bruised?

Well, Okanagan Biotechnology has done just that.

This project started in 1997 when the company started a project aimed at controlling this browning process.

Using their patented Polyphenol oxidase (PPO) technology they have been able to silence the gene that causes the browning reaction and deliver a fruit that will not go brown when cut or bruised.

Since the project started they have generated and selected putative clones of popular apple varieties based on their low browning activity and their "non-browning" phenotype.

These "non-browning" commercial apple varieties are unique products that offer a wide range of grower and consumer benefits.

The company is targeting the release of the first non-browning commercial apple products in 2005.

This will include popular apple varieties or new sports of Royal Gala, Golden Delicious, Fuji, Granny Smith and others.

These varieties will be made available through conventional tree fruit nursery suppliers in the USA and Canada.

Commercial release in other markets will depend on regulatory approval activities and market conditions.

The company's future plans also include follow-on apple varieties for the fresh-cut industry and the introduction of similar non-browning trait into cherries, pears, peaches and nectarines.

Based upon my market research of the biotechnology industry, there are several critical success factors that need to be in place for a biotechnology company to be successful.

This includes: access to qualified research personnel; access to sufficient capital while you bring your products to market; time to market; and the exclusivity and patent protection required to virtually shut your competition out of the market.

In my opinion, with Okanagan Biotechnology holding the exclusive worldwide license for the use of PPO technology in tree fruits, which includes the right to sub-license the PPO technology, this company is well of its way to becoming a world leader in their field.

Since writing about the biotechnology industry last week, I have had several individuals call me about their concerns about the long-term effects that genetic changes to plants and food may have.

I would agree that much more research is required to determine the impacts and present the facts about this emerging technology.

While there may not be clear scientific evidence that the risks associated with biotechnology are any greater than those of traditional methods, the industry still needs to protect Canada's reputation for having one of safest food supplies in the world.

Okanagan Biotechnology seems to have struck an interesting balance as they appear to have taken a conservative approach by focusing on genes where the amplification or silencing of the gene activity can deliver the attribute changes they seek.

The company states that they committed to ensuring that the addition of foreign (non-plant) genes will only be pursued once they are confident that the finished product is completely safe.

Despite the concerns, I am excited by an emerging industry in the Okanagan that leverages the natural strengths of the Okanagan Valley.

I mentioned the non-browning apple to my three children, and one of them commented, "That's really neat Dad. So I could like take bites out of my apple before school, at recess and lunch and then finish it after supper?"

"Sweet. I think they should call it the evergreen apple."

Great ideas but I am not sure how sane we would be with unfinished apples all over our house.

Nothing like trying to stretch the Okanagan apple a little too far!

Steve Burns, CA, CMC, CFP, is the President and CEO of Burns Innovation Group Inc. (www.burnsinnovation.com), a full service consulting firm based in Kelowna. He may be reach at 763-4716 or by email at:

steve@burnsinnovation.com