

Functional Technologies Corp. (TSXV: FEB) – Licenses two proprietary technologies to add value

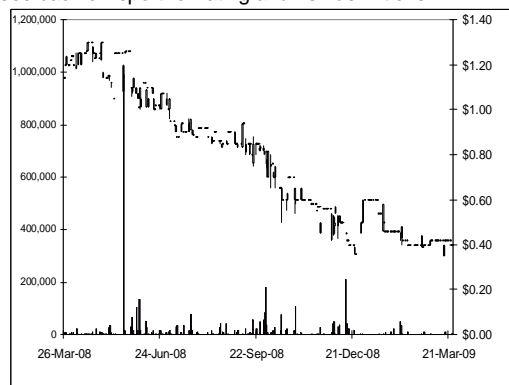
Sector/Industry: Food Materials/Animal Healthcare

www.functionaltechcorp.com

Market Data (as of March 26, 2009)

Current Price	C\$0.40
Fair Value	C\$1.70
Rating*	BUY
Risk*	5 (Highly Spec)
52 Week Range	C\$0.35 – C\$1.30
Shares O/S	24.05 mm
Market Cap	C\$9.62 mm
Current Yield	N/A
P/E (forward)	N/A
P/B	1.64
YoY Return	-66.7%
YoY TSX-V	-62.5%

*see back of report for rating and risk definitions



Investment Highlights

- In December 2008, the company announced the exclusive licensing of proprietary hydrogen sulfide (H₂S) reducing yeast technology from the University of California at Davis. The formation of H₂S in wine has been a major problem in winemaking because, if untreated, it can give the wine the undesirable odor of rotten eggs.
- This new H₂S reducing technology is expected to complement FEB's existing ethyl carbamate (EC) reducing yeast platform, and, we believe, will significantly increase the value proposition of FEB's proprietary yeasts. The two technologies combined will provide FEB the capability to provide solutions for two major problems facing commercial wineries today - one to improve safety and the other to improve sensory attributes.
- On February 26, 2009, the company announced the exclusive licensing of another proprietary urea-degrading yeast technology. Management believes that combined, their two EC reducing yeast platforms will provide consistent efficacy, and also the potential to reduce EC levels beyond 90% levels.
- FEB intends to commence sales of its first commercial production inventory in the 2009 wine making season. The company's plan to setup a facility to run a pilot 50,000 kg production operation at Grahams Pond depends on financing.
- Since our initiating report, two reputed research centers came out with study results showing the carcinogenic risks associated with alcohol consumption. Such results are positive for FEB's prospects as they reinforce the need for EC reducing technologies in the industry today.
- At the end of November 2008, the company had \$1.84 million in cash. We believe the company will have to raise about \$4 - \$5 million in FY2009, which also includes the cost to setup a pilot plant at the Grahams Pond facility. Management expects to raise a major portion of the required capital through non-dilutive funding such as government loans.

Key Financial Data (FYE - Aug 31)

(C\$)	2007	2008	Q1-2009
Cash and Cash Equiv.	3,622,558	255,121	1,838,543
Working Capital	3,712,045	587,712	2,127,128
Total Assets	4,134,575	4,650,222	6,162,449
Revenue	-	-	-
Net Income	(1,703,022)	(2,037,096)	(772,225)
EPS	(0.10)	(0.10)	(0.04)

Functional Technologies Corp. is a functional foods developmental company developing proprietary yeast for the global food and beverage market. The company is also developing micro algae based biological products for the animal health care industry. The company commenced commercial sales of its proprietary yeast products last month.

More studies indicating carcinogenic risks from alcohol consumption

In our initiating report we had discussed the importance of increasing awareness among consumers, food and beverage producers, and regulators, on the carcinogenic health risks from EC consumption, as one of the important success factors for FEB. Since our initiating report, two reputed research centers came out with study results showing the carcinogenic risks associated with alcohol consumption.

- A study (published in the February 2009 online edition of the *Journal of the National Cancer Institute*) conducted by the University of Oxford on nearly 1.2 million women, indicated that even low to moderate alcohol consumption on a regular basis can increase a woman's risk of developing cancers of the breast, liver, rectum and, in smokers, the mouth and throat, by as much as 13% combined.
- A recent study by the Fred Hutchinson Cancer Research Center showed that red and white wine may actually encourage tumor growth. The study was based on comparing health records of more than 6,000 breast cancer patients against a control group of more than 7,000 subjects.

Although these results do not directly imply that EC is responsible for the increased risks, considering that EC is a known carcinogenic, we believe, it is highly likely that EC is one of the contributors. **Such study results are positive for FEB's prospects as they reinforce the need for EC reducing technologies in the industry today.**

In addition, in their February 2009 issue, *Wines and Vines* mentioned that “European food safety bodies seem to be moving toward mandatory standards for urea and ethyl carbamate (EC) in wine, thus potentially affecting the North American wine export market”. In the same issue, *Wines & Vines* discussed in detail the problems caused by EC and FEB's Phytterra yeast as a potential solution. We believe it shows FEB's recognition and the growing awareness on the harmful impacts of EC in the industry.

Licenses H₂S Reducing Yeast Technology

In December 2008, the company announced the exclusive licensing of a proprietary hydrogen sulfide (H₂S) reducing yeast technology from the University of California at Davis (UC Davis). Before discussing the specifics of the licensing agreement, let us take a look at the problems created by H₂S in winemaking.

The formation of hydrogen sulfide (H₂S) in wine has been a major problem in winemaking because, if untreated, it can give the wine an undesirable odor of rotten eggs. H₂S is a colorless, flammable gas, and even very small quantities of H₂S can spoil a fine wine. H₂S, if not removed promptly, can also create other problems, as it can go on to form compounds like thiols, disulphides and mercaptans, resulting in more foul smells like rotten garbage, garlic and rotten onions. Also, these compounds are more difficult to remove because they are much less volatile than H₂S.

H₂S production is primarily influenced by the reaction of yeast strains to amino acid levels in grape juice, temperature levels and fermentation rates. In order to mitigate the foul smell as a result of H₂S formation, wine producers either take preventive actions, or use treatment

techniques if H₂S has already been formed. Either way, the producers have to take measures to mitigate this problem. The following table shows some of the most common causes of H₂S formation and the preventive actions adopted by producers.

	Cause	Prevention
1	Residual sulfur on the grapes due to late spray for powdery mildew	Grape growers stop spraying with sulfur several weeks before harvest time
2	H ₂ S can be produced when yeast lacks micro-nutrients or vitamins	Add proper amount of yeast nutrients
3	Some strains of yeast produce more hydrogen sulfide than others, such as Montrachet	Use proper yeast
4	Low nitrogen levels in the grapes which results in higher levels of H ₂ S being produced by yeast cells	Add extra nitrogen sources - Diammonium phosphate is often used as a source of nitrogen

The following are the two most widely used treatment solutions for removing H₂S:

1. Removing H₂S by Racking – This procedure is typically used by home winemakers. H₂S is removed by first adding sulphur dioxide to the wine when fermentation is complete. The wine is then aerated by racking with a lot of splashing and bubbling to blow off the H₂S gas. The sulfur dioxide in the wine converts the remaining H₂S back into elemental sulfur, and the sulfur settles to the bottom of the storage container. Aeration is primarily used for treating mild cases of H₂S. The problem with aeration is that it must be used with caution, as aeration can convert H₂S into disulfides, which smells as bad as H₂S and more difficult to remove.

2. Removing H₂S with Copper Sulfate – Commercial wineries, and advanced home winemakers, use copper to chemically remove H₂S from wine. Copper, when added to wine, reacts with H₂S to form copper sulphide, a black insoluble precipitate that falls out of the wine immediately. Although the copper addition rates are very low, wine has a low pH, and the acid may dissolve too much copper. Excessive amounts of copper may be deposited in the wine, and as copper is a heavy metal, it should be used with caution. Excessive levels (over 1 mg/L) of copper may be considered toxic.

The purpose of presenting the existing commonly used preventive and treatment solutions was to show that there is currently no single solution that is simple, cost-effective, risk-free, and at the same time effective in minimizing H₂S content.

UC Davis has developed a yeast technology that has the capability to consistently minimize H₂S. The technology, which is a "preventative" solution, can be applied across commonly used yeast strains while preserving their desirable characteristics. This is a very significant trait as producers are very particular about maintaining their products' sensory attributes.

This patent pending technology, invented by Dr. Linda Bisson at UC Davis' Viticulture and Enology Department (Dr. Bisson is also a member of the advisory board of the American Viticulture and Enology Research Network, and Science Editor for the American Journal of Enology and Viticulture), has long been supported and funded by the American Vineyard Foundation (a California corporation organized by the American Society of Enology and Viticulture as a vehicle to raise funds for research in viticulture and enology) and the California Competitive Grant Program for Research in Viticulture and Enology.

Based on the information we have, we believe this technology is a simple, risk-free, efficient solution to minimize H₂S; and as a result, is likely to generate demand in the market.

Significant addition to FEB's portfolio – We believe this new H₂S reducing technology, if technologically and economically feasible on a large scale, will be a significant addition to the company's portfolio of proprietary technologies, as it complements their existing EC reducing yeast platform. **The two technologies combined will provide FEB the capability to provide solutions for two major problems facing commercial wineries today - one to improve the safety and the other to improve sensory attributes.** FEB is currently working on applying both technologies to the same yeast. Our discussions with management indicated that it is a straight forward process and that they do not expect any complications in this process.

The economics of the new technology are not known yet. However, management does not expect a significant increase in costs to incorporate the new technology to their existing Phytterra yeast. Therefore, considering that yeast is not highly price sensitive to wine producers (the cost of yeast in a bottle of 750 ml wine is just 1.5 cents versus the total cost of \$5 - \$7), we do not believe that its economics will play a significant role in wine producers' decision making process. We believe it is the technology's simplicity (as no additional preventive or treatment solutions are needed to minimize H₂S), efficiency and safety that will add value to producers.

Licensing Agreement – FEB now holds the exclusive rights to commercially utilize the technology for the life of the last patent relating to the technology issued in the U.S. and any foreign countries where patent rights exist. In return, FEB has to make an initial payment of US\$15,000 (due June 2009), annual payments of US\$2,000 (commencing December 2009), and reimburse patent costs of US\$25,924. In addition, FEB has to pay royalties on sales. A minimum royalty of US\$6,000 is payable after 5 years. If FEB sub-licenses the technology, FEB has to pay royalties on the income earned from sub-licensing the technology.

***Licenses
another EC
reducing
technology***

On February 26, 2009, the company announced the exclusive licensing of another proprietary urea-degrading yeast technology. According to FEB, the new platform will complement the company's existing technology by effectively metabolizing and eliminating urea external to the yeast cell. In contrast, FEB's existing urea-degrading technology (which has shown EC reductions of up to 90% in wine) metabolizes and eliminates urea within the yeast cell. **Management believes that the new technology will help provide consistent efficacy, and also the potential to reduce EC levels beyond 90% levels. In addition, the new technology will provide another layer of intellectual property protection which is very crucial for early stage companies such as FEB.**

Under the license, the company holds the exclusive rights to commercially utilize the technology for the life of the last patent relating to the technology worldwide. The licensing costs associated with this agreement were not disclosed.

***Completes
MPD
Acquisition***

In our initiating report in December 2008, we had discussed the company's plans to acquire Maritime Pulse Drying (MPD) based in PEI. MPD is a custom spray drying company with new, state-of-the-art, pulse spray drying equipment and highly specialized technical personnel. The drying technology, which is capable of drying cream (wet) yeast into a bulk dry active product, will help facilitate FEB independently produce its own final bulk dry active Phytterra Yeast products.

On Dec 12, 2008, the company announced the completion of the acquisition in consideration of US\$10,000 cash and 143,000 common shares, and assumed net liabilities of approximately \$0.90 million (which includes government funding and commercial bank debt). The company now has amassed a significant portion of the necessary infrastructure, equipment, and technical knowledge required to complete the manufacturing facilities necessary to produce final bulk dry active Phytterra Yeast products. Refurbishing work on Grahams Pond has begun and the MPD equipment installation will begin shortly.

In addition, FEB has also secured an agreement to perform contract drying for a non-competitive company - providing an additional source of revenue. FEB will have to pay a small royalty on these revenues to MPD's previous owners.

***Development
Plans***

As mentioned in our initiating report, the company intends to commence sales of its first commercial production inventory (produced through contract manufacturing) in the 2009 wine making season.

The company's plan to setup a facility to run a pilot 50,000 kg production operation at Grahams Pond depends on financings (about \$3 million). If everything goes according to plan, the company's goal is to bring production in house by the end of this year. The company might pursue contract manufacturing in the interim, and will continue seeking joint venture partners or opportunities to license out the technology to yeast producers.

***Receives
Additional
Grant***

The company receives non-dilutive government funding through the Atlantic Innovation Fund, the National Research Council of Canada Industrial Research Assistance Program, and PEI Business Development. The AIF funds are conditionally repayable based on the commercial

success of the AIF funded projects, while funding from the PEI Business Development and NRC-IRAP are not repayable as long as the company meets certain milestones.

In December 2008, the company announced it received an additional \$125,000 grant from PEI Business Development Inc. towards the development and commercialization of its Phytterra Yeast products. The company now has access to approximately \$3.72 million from these grants; of which it had claimed about \$1.32 million (as of November 2008).

	Government Funding	Claimed (as of November 30, 2008)	Remaining
AIF, Algae	\$1,542,600	\$556,298	\$986,302
AIF, Yeast	\$1,750,000	\$547,811	\$1,202,189
PEI Business Development, Algae	\$115,650	\$85,869	\$29,781
PEI Business Development, Yeast	\$125,000	\$27,926	\$97,074
NRC-IRAP, Functional	\$190,000	\$99,928	\$90,072
Total	\$3,723,250	\$1,317,832	\$2,405,418

Financials

At the end of November 2008, the company had \$1.84 million in cash. Working capital and the current ratio were \$2.13 million and 8.4x, respectively. In the first three months of FY2009 (quarter ended November 2008), the company reported a net loss of \$0.77 million (EPS: -\$0.04) versus \$0.70 million (EPS: -\$0.04) in Q1-2008. Net loss increased as a result of the establishment of new offices and/or laboratory facilities in Charlottetown, PEI; Richmond Hill, Ontario; and Napa, California, and an increase in the number of staff from 6 to 20. The following table shows the company's cash and liquidity position at the end of November 2008.

Liquidity Position (C\$)	2009 (Q1)
Cash and Cash Equiv.	\$1,838,543
Working Capital	\$2,127,128
Current Ratio	8.43
LT Debt	22,588
LT Debt/Asset	0.4%
Burn Rate	(252,954)

We estimate the company had a burn rate (including capital expenditures) of about \$0.25 million per month in the first three months of FY2009. **We believe the company will have to raise about \$4 - \$5 million in FY2009, which also includes the cost to setup a pilot plant at the Grahams Pond facility. Management expects to raise a major portion of the required capital through non-dilutive funding such as government loans.**

Stock Options and Warrants: We estimate the company currently has about 3.59 million warrants (weighted average exercise price of \$0.60) and 1.83 million stock options outstanding (weighted average exercise price of \$1.00). None of the options and warrants are currently in the money.

Valuation

We have not made any major changes to our DCF valuation. Our base-case DCF valuation dropped from \$1.70 to \$1.63 per share primarily because of share dilution and a reduced cash position. A summary of our valuation model is shown below.

DCF Valuation (C\$, 000s)		
Year	Free Cash Flow (FCF)	PV of FCF
2009	(6,396)	(5,885)
2010	(4,600)	(3,787)
2011	(2,419)	(1,783)
2012	625	412
2013	7,341	4,331
2014	8,325	4,395
2015	7,247	3,424
2016	7,302	3,088
2017	7,360	2,785
2018	7,425	2,514
2019	7,494	2,271
Terminal Value	86,462	26,199
NPV		\$37,964
Discount Rate	11.7%	
Terminal Growth Rate	3%	
Cash - Debt*	\$1,192	
Equity Value (C\$)	\$39,156	
Shares O/S (dil)	24,047	
Value per share	\$1.63	

* Cash position includes the present value of government funding

The table below shows the sensitivity of our valuation to our market share and discount rate assumptions

Market Share	0.25%	0.50%	1%	2%	3%	4%	5%
Discount Rate							
10.0%	\$0.30	\$0.90	\$2.26	\$4.92	\$7.57	\$10.22	\$12.86
11.7%	\$0.10	\$0.59	\$1.63	\$3.66	\$5.66	\$7.67	\$9.67
15.0%	-\$0.09	\$0.26	\$0.96	\$2.31	\$3.64	\$4.96	\$6.29
20.0%	-\$0.22	\$0.02	\$0.46	\$1.30	\$2.11	\$2.92	\$3.73

Rating

Even though we believe the licensing of the two new technologies enhances the probability of achieving a higher market share, we have decided to take a conservative approach and maintain our base-case market share assumption at 1% until the company combines all the proprietary yeast technologies and commences sales. **Therefore, based on our review of the progress since our initiating report in December 2008, we reiterate our BUY rating, and maintain our fair value estimate at \$1.70 per share.**

Risks

The following risks, though not exhaustive, may cause our estimates to differ from actual results:

- Increasing awareness among consumers on the potential health risk from EC consumption is one of the very important factors that will determine the success of Functional in this space.
- Expansion to new markets will depend heavily on the company's success in the wine market.

- It is likely that FEB will need to pursue equity financings going forward to fund operations and capital expenditures.

We continue to rate the shares Risk 5 (Highly Speculative).

Buy – Annual expected rate of return exceeds 12% or the expected return is commensurate with risk

Hold – Annual expected rate of return is between 5% and 12%

Sell – Annual expected rate of return is below 5% or the expected return is not commensurate with risk

Suspended or Rating N/A— Coverage and ratings suspended until more information can be obtained from the company regarding recent events.

Fundamental Research Corp. Risk Rating Scale:

1 (Low Risk) - The company operates in an industry where it has a strong position (for example a monopoly, high market share etc.) or operates in a regulated industry. The future outlook is stable or positive for the industry. The company generates positive free cash flow and has a history of profitability. The capital structure is conservative with little or no debt.

2 (Below Average Risk) - The company operates in an industry where the fundamentals and outlook are positive. The industry and company are relatively less sensitive to systematic risk than companies with a Risk Rating of 3. The company has a history of profitability and has demonstrated its ability to generate positive free cash flows (though current free cash flow may be negative due to capital investment). The company's capital structure is conservative with little to modest use of debt.

3 (Average Risk) - The company operates in an industry that has average sensitivity to systematic risk. The industry may be cyclical. Profits and cash flow are sensitive to economic factors although the company has demonstrated its ability to generate positive earnings and cash flow. Debt use is in line with industry averages, and coverage ratios are sufficient.

4 (Speculative) - The company has little or no history of generating earnings or cash flow. Debt use is higher. These companies may be in start-up mode or in a turnaround situation. These companies should be considered speculative.

5 (Highly Speculative) - The company has no history of generating earnings or cash flow. They may operate in a new industry with new, and unproven products. Products may be at the development stage, testing, or seeking regulatory approval. These companies may run into liquidity issues, and may rely on external funding. These stocks are considered highly speculative.

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