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VALCENT PRODUCTS INC.

VCTZF \$0.148 - \$0.19

Germination of a Vital, Strategic Resource

Valcent Products Inc. produces one of the very first standalone turnkey commercial hydroponic systems for growing leafy crops and some vegetables. It uses vertically oriented soil free hydroponic trays. It can grow 20 times the crops using only 7% of the water required for a single normal crop using computers to move plants through closed loop watering, nutrient and lighting stations.



Highlights

- VertiCrop and AlphaCrop units available for commercialization
- First sales for VF Innovations Ltd., in Hong Kong
- Vertical growing is latest idea in the sustainable discourse
- Structural shift to a higher ROI for market garden industry
- First Operational installation in Paignton Zoo, Cornwall, UK
- Small footprint, higher yield, high margin, high density production
- Previously un-addressable urban and near urban markets
- Will operate units in addition to selling them
- Limited competitive environment
- Strong management team and Board of Directors in place
- Increases production and decreases ecological impact
- Customer economics supportable and profitable
- In selling enquiries with over 100 global prospective buyers
- Grows 20 times the produce of a traditional farm
- Only requires 5% - 10% of the water normally needed for one crop
- Organic - pesticide and herbicide free
- Can operate in cellars, warehouses, and buildings, using LED's
- Great response to critical food and water resource pressure
- Food security, reduced food miles
- Closer to huge addressable market of global consumers
- Grows in any climate and all year round
- Delivers maximum food nutrition
- Significant positive reception from multiple high profile sources such as the Houses of Parliament, The Royal Horticultural Society, Time Magazine's top 50 technologies ranked 16th, NASA's "Launch" project ranked 10th out of 150 entrants.

1 Year Price Target	\$0.40
1 Year ROR	170%
52 Week Range:	\$2.50 - \$0.15
Market Capitalization:	\$7.681 million
Average Daily Trading Volume:	75,399
US \$ Av Daily Trading Volume:	\$14,325
Free float	9 million
Fiscal Year End:	March 31st
Shares Outstanding:	57 million
Restricted Unregistered	38 million
Warrants	8.5 million
Fully diluted shares	74.8 million
Year to Date %	-66.67%
Cusip number	918881202
Dividends	None
Projected margins	35%

Incorporated in Canada



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I. Executive Summary

In this most recent three year period during which the US and European equity markets have been tested by the tightening of credit and excessive price volatility, Valcent Products, Inc. has reached a turning point in its fortunes as well as a low ebb in its share price. Valcent Products (EU) Ltd. a wholly owned subsidiary of Valcent Products Inc., made a significant contribution to the development and marketing effort. They displayed the VertiCrop product at international agricultural shows and exhibitions causing significant interest in one of the most acutely strategic of cleantech subjects, food and water. The company has significantly restructured, reducing its debt load by approximately \$13 million, partly by exchanging debt for equity. It expects to be debt free by the end of this financial year. They followed this with a reverse share split, and finally hired an expert potential CEO, Stephen Fane, who has a proven track record of achievement in the market gardening space. The company was an early pioneer in the production of oil from algae but after some strategic examination, they cut the algae, cosmetic products and most recently the Tomorrow's Garden activities.

The company is now focused on two innovative market garden hydroponic products, the VertiCrop and the AlphaCrop. It is well led, and poised with its first of many orders in hand. It is at the start of an expected ramp up in revenues driven by the strategic importance of food production and water conservation in a world where those commodities are increasingly under pressure. Its sales pipeline is bolstered by corporate alliances such as the sponsorship with Em-Link and with Robert F. Kennedy Jr. and Stephen Kennedy Smith Jr. There are now compelling financials in place for the coming years. We expect this will lead to at least 13 VertiCrop sales in this financial year and 7 orders for the AlphaCrop unit. Margins appear capable of a healthy 35% leading to a profitable 2010, and causing 2011 to look like it could double revenues and triple earnings. The company intends to trade on a senior exchange by year end. It is now the leading global supplier of turnkey hydroponic systems. Its small footprint but high production yields enable expansion to previously un-addressable urban marketplaces. So great is the promise of the economics that the company will produce 4 machines each year for the next two years to operate itself to enjoy the returns and eventually sell to new customers. Valcent has direct sales initiatives in 37 countries

II. Investment Thesis

A recent UN world population report prepared by 388 experts, described the increasingly stressed resource situation as the "final wake-up call to the international community". 40% of the land surface of the Earth is dedicated to inefficient, unsustainable farming practices which nevertheless feed some 6.7 billion human beings. Environmental pressure on climate, water, sustainable food production and land resources by a population expected to climb towards 9 billion by 2050 is widely expected to exacerbate everything. The amount of arable land available for each person has dropped from 1 acre in 1970 to half an acre in 2000 and will be one third of an acre by 2050.

Humanity is enthralled by a farming model that is two dimensional, as though a field was the only way that a crop could be grown, instead of making use of the huge volumes of space available above that field by going vertical and allowing a plant to access its key needs; light, nutrients and water. 70% of all the fresh water we use

goes to agriculture. Fully 40% of the energy consumed in California is just to move water around. A total of 10 gallons of water is needed to grow a head of lettuce! 41% of the US transportation is food related and the average distance food travels from farm to table is 1,500 miles. VertiCrop can reduce this to almost zero in addition to significantly improving the quality and freshness of the produce.

Hydroponics and aeroponics have come of age and are now building critical mass as modern agricultural techniques. A VertiCrop using 5,000 square feet in a vacant lot or car park, can generate more nutritious, local grown produce than a 15 acre farm. Urban centers are mopping up more people all the time and by 2050 are expected to house fully 80% (60% now) of the Earth's population. Land area 20% larger than Brazil will be needed to feed that population with traditional food production practices. Currently 80% of the land that can produce is producing and some 15% is laid waste by poor management practices. In the face of this shortage we need to scale up our production for another 3 billion people by 2050.

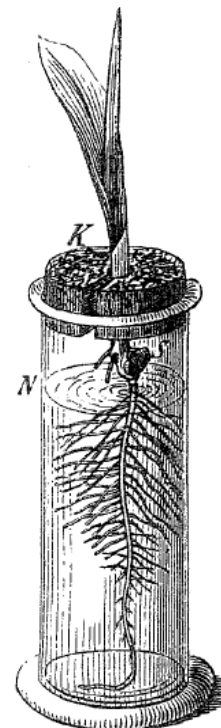
Historically, humanity has been awful at growing crops and has taken for granted the natural resources, soil and water, that were available. We protect ourselves from the elements but expose our food to them. Crops are destroyed in huge volumes by rains, storms, hurricanes, tornadoes, poor storage, lack of refrigeration, monsoons, insects and animals. Hydroponic farming methods are not new but could become mainstream in order for the myriad benefits to accrue, and just in time. California, Arizona and Mexico have growing markets but shortages of water, rising fuel and transportation costs and land salinization get in the way of traditional agricultural methods. Hydroponics can efficiently add nutrients into the water of growing crops that are too expensive or not available to field crops and ensure a healthy plant. Typically only a handful of minerals exist in a field and crops are often starved of many of the 24 - 52 essential minerals that are easy to administer using hydroponics. The North American market for organic produce alone is \$8 billion per year and is increasing at the rate of 24% per year. That means in 3 years the demand for "organic" food will double to \$18 billion.

Public health costs are also affected by the food we eat. The Centers for Disease Control (CDC) estimates that 75% of US healthcare spending fixes chronic diseases most of which are preventable and linked to diet. It will be difficult to address the climate problem without first fixing the enormous energy and waste attached to current agricultural practices.

The Valcent (EU) Limited Paignton Zoo installation is now providing real world data on growth of produce in a machine that essentially challenges the global dominance of the food sector by producing better food, faster and for a lower cost. VertiCrop produces outstanding market returns and is cost competitive with current 'organic' produce. Valcent seeks to be identified with consumer preferences for a productive and sustainable future.

III. Hydroponics

Global farming is almost a 100% soil based event. Soil is deemed by current consensus to be the all important crop growing medium.



Its quality is dependant on factors such as its nutrient and moisture content. Since the 15th century was clear that plants grew perfectly well without soil. Soil itself is not a necessary prerequisite for plant growth. Almost any plant will grow without soil.

Hydroponics is a discipline that has received alternately positive and negative scientific review in its history. In 1627 “*Sylva Syvarum*”, by Sir Francis Bacon, was published a year after his death. He wrote about growing plants without soil. This was a good start. In 1699 John Woodward published work on growing spearmint without soil. He discovered that plants grew better in less pure water sources than in distilled water but was not able to distinguish between nutrients in the water and soil. He used rainwater (distilled), river and conduit water, adding mould to one instance and some soil in another. He concluded, “The Earth and not water is the matter that constitutes vegetables”. This was not as positive.

Growing plants without soils or any inert medium became termed ‘solution culture’ and became a standard teaching technique. In 1929 Berkeley University professor William Frederick Gericke created a sensation by growing 25 foot high tomato vines in his garden using nutrient mineral solutions but without any soil. Dr. W. A. Satchell of the University of California coined the term hydroponics from the ancient Greek words for water and work and from the word Geoponics (ground and work), already used to describe agriculture. Gericke was famously secretive about his techniques and this lack of willingness to describe his techniques eventually cost him his job. It was up to Dennis Hoagland and Daniel Arnon of the University of California to investigate his claims.

From this extremely positive position we once more visit the mundane as Hoagland and Arnon debunked Gericke, claiming that his yields were no better than those of classical agriculture using high quality soils. Perhaps they were trying to damp the enthusiasm that was growing for hydroponics as an antidote to the agricultural disaster we know as the dust bowl, that impacted farming in the late 1930’s, deepening the effects of the economic depression. Interestingly, one of the conclusions in their paper was, “Plants cannot be spaced closer than in a rich soil”, revealing that the third dimension of hydroponics, the space above the growing plane, was just one of the advantages not considered at the time. Hoagland and Arnon’s depressing manifesto was written to dull public enthusiasm for hydroponics rather than promote it. However, the advantages of hydroponics were too many to ignore for long. Hoagland, for all his lack of interest, nevertheless manufactured mineral nutrient solutions that are still used today.

From 1935 until the initial Japanese air raid of the Second World War on December 8, 1941, the day after the Japanese attack on Pearl Harbour, Pan Am flights used Wake Island in the Pacific Ocean as a refueling stop for their US to China route. They had a village there called “PAAville”, the first human settlement on the island where vegetables were grown using hydroponic methods as a more economic method of resupplying food for passengers than flying in supplies from the mainland.

Inventor Allen Cooper in England developed a hydroponic technique called Nutrient Film Technique (NTF) which allowed water, nutrients and air, and therefore oxygen, to be supplied to a plant’s roots using channels where the nutrient medium flowed. Balancing these requirements was always the source of conflict in other forms of hydroponics. Walt Disney’s EPCOT center featured a variety of hydroponic techniques in 1982. Subsequently, NASA has done extensive work as a result of the

interest of food production on long space voyages and pioneered the use of light emitting diode (LED) systems for heat and color spectrum control where neither was otherwise available. In 1978, Dr. Howard Resh published "Hydroponics Food Production", which focused on the nutrients needed for healthy plant growth. He still runs a Caribbean based hydroponics facility.

Factors influencing plant growth included access to water, light and nutrients. As research evolved, this became clearer. Farmer's fields were famous for experiencing difficulty in all three areas. Root conditions clearly required a constant flow of oxygenated water and nutrients and the leaves required light. Hydroponics addressed these problems and increased yields proportionately. The use of the term 'soilless' has also been confused in hydroponics by the adoption of techniques which vary from using water as a nutrient alone all the way to various kinds of medium such as sand, stones, soils and gravel. Roots often need support if plants are tall or have lignin cellulosic structures that require a strong foundation and need an inert medium, such as diahydro, perlite, gravel, mineral wool, or coconut husk (coir), wood fiber, polystyrene packing peanuts, brick shards, vermiculite or expanded clay.

Nutrients can be static and provided with water in a vase-like presentation or flowing, a much better method for preventing the growth of algae and other contaminants. It uses a central storage tank that can service potentially thousands of plants. In the last few years, the popularity of the hydroponics marketplace has increased rapidly. Hydroponics is today a well established branch of agronomy and has proven its practicality. Commercial hydroponics farms often use computers to adjust the frequency of species specific watering, exposure to nutrients and light. The well established advantages speak for themselves:

- **No soil needed**
- **no soil diseases**
- **Water is re-cycled**
- **Uses 1/20th of normal water demand**
- **Control of nutrients**
- **No eutrication, or "Red Blooms"**
- **Consistent, stable and high yields**
- **No seasonal or climatic impact**
- **Pests and diseases controlled**
- **Low cost**
- **Use of non-agricultural land**
- **Faster growth**
- **Reduction in growing area**
- **No weeds**
- **Less labor, more automation**

Aeroponics

Aeroponics is another technique related to hydroponics which emerged in 1983 when Richard Stoner commercialized a technique used to grow plants by sufficient aeration of the roots. It recognizes that plant roots in soil are rarely completely submerged in water, but merely kept moist. A mist or aerosol of nutrient solution periodically saturates the plant's roots, stems and leaves with 100% of the available oxygen and CO₂. Plants grow faster when their roots obtain oxygen. This technique recognizes that 1 kilogram of water can only contain 8 milligrams of air whether or not it is aerated. Aeration of roots is an excellent advantage of this technique which has led to successful commercialization of propagation, seed germination and production of seed potato and tomatoes, leaf crops and micro-greens. Any species of plant can be grown this way due to the fine control offered by aeroponics. It

accelerates biomass growth and reduces rooting time. NASA demonstrated 80% increases in biomass growth using aeroponics vs. hydroponics using 65% less water and ¼ the nutrients all while keeping diseases and pathogens under control. Aeroponically produced plants also do not suffer transplant shock when planted in soil.

Nutrient solutions

There are many nutrient recipes for hydroponic usage depending on the target plant. Chemicals such as potassium nitrate or calcium nitrate potassium phosphate and magnesium sulfate provide the main ingredients.

TABLE 1.—Composition of Nutrient Solutions Used by Early Investigators* †

Sachs' solution (1860)		Knop's solution (1865)		Pfeffer's solution (1900)		Crone's solution (1902)	
Ingredient	Grams per 1,000 cc H ₂ O	Ingredient	Grams per 1,000 cc H ₂ O	Ingredient	Grams per 1,000 cc H ₂ O	Ingredient	Grams per 1,000 cc H ₂ O
KNO ₃	1.00	Ca(NO ₃) ₂	0.8	Ca(NO ₃) ₂	0.8	KNO ₃	1.00
Ca ₃ (PO ₄) ₂	0.50	KNO ₃	0.2	KNO ₃	0.2	Ca ₃ (PO ₄) ₂	0.25
MgSO ₄	0.50	KH ₂ PO ₄	0.2	MgSO ₄	0.2	MgSO ₄	0.25
CaSO ₄	0.50	MgSO ₄	0.2	KH ₂ PO ₄	0.2	CaSO ₄	0.25
NaCl	0.25	FePO ₄	Trace	KCl	0.2	FePO ₄	0.25
FeSO ₄	Trace			FeCl ₃	Small amount		

* These and other formulas are given in: Miller, E. C., Plant physiology, p. 195-97. McGraw-Hill Book Co., New York, N. Y. 1931.
 † For best results, these solutions should be supplemented with boron, manganese, zinc, copper, and molybdenum; see discussion in the text, pp. 29-31.

The main plant nutrients are dissolved cations (positively-charged ions) such as calcium, magnesium and potassium. The major nutrient anions (negatively charged ions) in nutrient solutions are nitrate, sulfate and di-hydrogen phosphate. Often scientists joke about drinking a glass of di-hydrogen oxide which is of course, water. Essential micronutrients are often added to supply essential elements such as iron, manganese, copper, zinc, boron, chlorine and nickel. Different recipes can supply different plant needs at different parts of their life cycle. Plants will deplete certain nutrients along with water more rapidly so the recycled medium needs to be monitored to replace nutrients that are missing and maintain a balanced acidity (PH value).

Light

Light increases biomass due to its essential role in photosynthesis. Plants take carbon dioxide (CO₂), oxygen (O₂) and water (H₂O) and alter molecular conditions such as electron orbits using the light energy. The engine for this transformation is a complex of molecules involving organic chemicals such as chlorophyll, partly made of magnesium. Photosynthesis creates starches or simple glucose molecules with a basic C₆ H₁₂ O₆ structure. These become the building blocks of plant proteins like

cellulose and lignin or sugars like fructose and starch and are an essential part of a plant's activity. The process releases oxygen and absorbs carbon dioxide. Plants also need oxygen for respiration, like animals, but not as much as they produce. 21% of the air we breathe today comes from the ancient and ongoing release of photosynthetic oxygen by plants.

Light can be provided by other sources than the sun. Artificial light can supplement sunshine and be used to lengthen the day greatly affecting growth rates and harvesting. Already different types of bulb are used for growing and harvesting stages of the plant life-cycle. New light emitting diode (LED) bulbs offer a huge reduction of power input to about 5% - 15% of the original levels along with a much better control of wavelength and durability. In addition very little heat is transferred from the bulb to the crop allowing bulbs to be closer and dimmer, as well as incorporate 'organic' insecticide capabilities.

What's Organic?

The definition of 'organic' is confused. In many minds hydroponic methods appear to be the pinnacle of artificiality, but in much of the public mind and the market gardening mind they are an approximation to pure organic due to the lack of any use of pesticides or herbicides. Algaecides and fungicides are sometimes however used. Some states esteem soil to be an essential ingredient for certification as an organic product, while the Federal government allows that some foods grown hydroponically and without soil can be termed organic. There is certainly a premium to be placed on any food which is called organic for its perceived 'naturalness', freshness and goodness.

Just as many companies push any 'green' angle about their products but on closer inspection have nothing green to offer, an activity termed 'greenwashing', so also does the word "organic" get abused by companies willing to have their customers believe in the organic nature of their product. If a product that has no pesticides, herbicides and is grown with all the nutrients, humidity, and temperature it needs can be described as organic, hydroponic plants certainly fit this description.

Biofortification

This concerns the capability of breeding or otherwise creating, plants that are better able to produce essential human nutrients such as the various vitamins and minerals like calcium to replace the gathering army of small vitamin pots we increasingly have collecting in kitchen corners. It also addresses the issues of optimizing when those plants are best eaten bearing in mind that many such nutrients are needed in particular chemical forms at a particular time. Hydroponic farmers now have vegetables with such extra nutritional value including lettuces with more calcium or potassium. Many factors influence whether much needed nutrients will be absorbed. For example, vitamin D is required before calcium can be absorbed. Calcium is a key nutrient that can combat common human ailments such as osteoporosis, where bones become more brittle with age. Chemicals such as phytate and oxalic acid will inhibit calcium absorption. Many types of beans contain phytate and prevent absorption when eaten with a calcium containing food. Calcium oxalate, found in broccoli and spinach, is a form of calcium that can pass right through us and irritate people suffering from kidney stones. Calcium in soybeans is equally unavailable until it has been turned into tofu. Hydroponic methods make the concept of bioavailability



Kevin Frediani - Curator of Plants, Paignton Zoo, with first VertiCrop™ lettuce crop.

Photographs show the trays with individual plant locations being planted for the first time. Clearly visible is the conveyor track and watering points on the left. Next page shows the polytunnel with the conveyor track visible.



VertiCrop™ Week 2 - Lettuce Root Development



VertiCrop™ Week 2 - Red Lettuce



Electronics box with computer controller on the right



Highly visible view of the 1/8th acre size of the greenhouse along and conveyor track

a reality, the breeding food plants that have the right nutrients which can readily be absorbed by the human body.

VertiCrop offers hydroponic equipment that incorporates many of these developments but additionally and critically, enhances the use of the vertical area above the ground to increase yields significantly. It is the first turnkey solution commercially available anywhere in the world. It is a development that already has operational machines producing high quality grocery products for local food consumption.

IV. The Technology

The **VertiCrop** system employs a conveyer rail similar to that found in a dry cleaning store that holds clothing. Instead of clothing are 350 vertical hanger supports on the standard model which hold 16 plastic shelves each. Each shelf can be of different design, but the Paignton Zoo machine has 20 spaces for plants and access for water and nutrients carried by the water. In one 1/8th of an acre, the machine carries a total of 112,000 individual plants in a crop. As the trays are conveyed around the top mounted closed-loop track, they arrive at feeding stations where they receive nutrients and water. The movement makes it possible for all available resources to be provided adequately to each plant to ensure healthy and rapid growth. The initial system, installed in Paignton Zoo, shown in the photographs above uses a basic greenhouse which keeps out the elements and can control lighting, humidity and temperature.

The structure can be a traditional greenhouse as in this case or installed within a building. Natural light can be augmented or replaced entirely with artificial lighting provided by efficient light emitting diodes (LED's) which provide light without wasting power by generating unnecessary heat. This makes it possible to place the system within a building, cave, cellar or in a geographical location that might normally be inhospitably dark or cold. This implies an opening up of a significant captive market where you can have fresh produce even in freezing countries such as northern Canada or Finland, places that currently spend a lot of money transporting fresh produce.

A computer controls all the variables enabling a consistent and optimal environment for the growing plants. Propagation of the plants is arranged in a separate building so that trays of seedlings are brought to the system and finish their growing. Harvests can be as many as 24 per year depending on the crop specifics. Computer control makes it possible to have individual crop programs significantly aiding the productivity of the system. Many similar crops can be grown at once. A range of leafy crops can be grown in the system and a partial list is available in the Appendix. All nutrients vital to the healthy growth of the plant are added to the water. Each plant is given a small piece of growing medium in which it can grow its roots and have access to air, water and nutrient medium. Water and nutrient run-off is captured, reconstituted to replace nutrients absorbed by the growing plants, and recycled reducing consumption to as little as 5% of conventional systems.

The AlphaCrop System

AlphaCrop is a smaller variant of the VertiCrop design. It is also geared to the denser growth of multiple plants within a volume of space with superior productivity compared with a normal field. AlphaCrop works around an A-Frame in which

horizontal trays of plants rotate vertically ensuring equal light. The structure can be built in varying heights and length combinations and can be easily scaled up from a single unit to multiple modules all operating with the same irrigation and motor. Growing trays can be hydroponic using different techniques including floating raft, nutrient film, flood and drain systems etc, or hold a soil such as compost, peat or coir. Supplemental lighting systems are available.



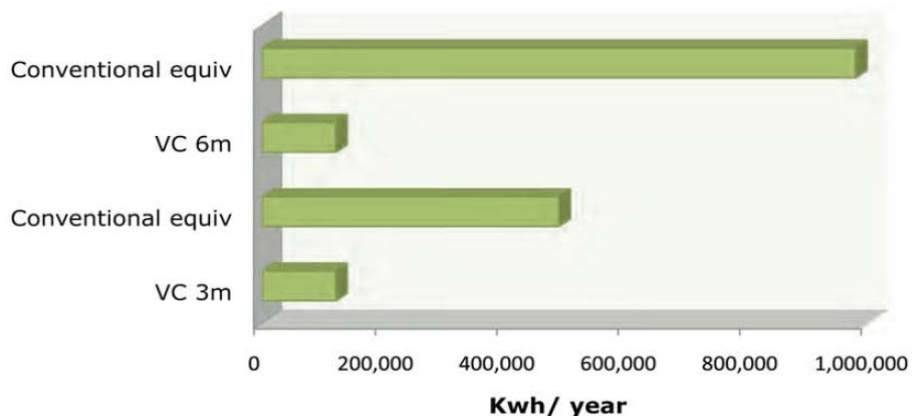
The AlphaCrop system

Units are low cost, packed in flat boxes and easy to assemble. The shelf height allows easy access harvesting and the system is set up for a wide range of crops including strawberries, all leaf crops, salad potatoes, baby carrots, cherry tomatoes and herbs.

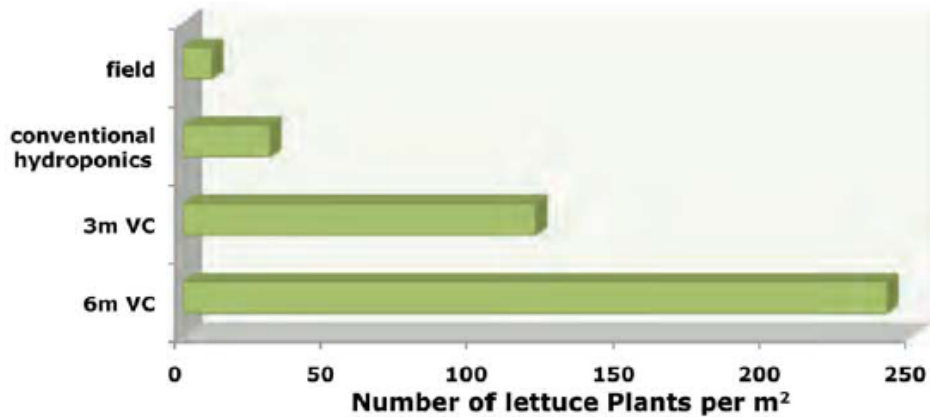
V. Productivity Comparisons

The VertiCrop system is 6 meters tall, enhancing the use of the volume of space above the ground. The following chart illustrates clearly the number of lettuce plants that can be grown in each case (with a hypothetical 3 meter version included). The system is efficient in its use of energy dwarfing the energy intensity needed in a farm and creating efficiency that underlies the assumptions about cost and efficiency that will drive revenues.

Energy use (Kwh / year) comparison between VertiCrop™ and conventional equivalents



Comparison of VertiCrop™ output with conventional hydroponics and field grown lettuce



VI. Competition

The hydroponics industry was once the domain of biology labs and high tech experiments exploring the possibilities of food production for esoteric applications such as space voyages. Since gardening itself is such a popular pastime, the technique has long been the domain of the market gardening set and every town and yellow pages has multiple suppliers of hydroponics equipment. This very fragmented base now has the first appearance of larger operations.

Eurofresh Farms was started by Dutch immigrants as recently as 1992. It is the largest commercial hydroponics facility in the world, selling 56 million kg of tomatoes in 2005 with 318 acres under glass, representing about a third of the hydroponic greenhouse area in the US. They use rock wool as a medium and use the 'run to waste' technique to grow many varieties of tomatoes, cucumbers and bell peppers. Their marketing materials speak of eco-friendly practices which dispense with insecticides and herbicides. They managed to join with the release of Disney's "Ratatouille" by releasing some marketing material for the DVD package. In 2008 they won the "Category Captain" award from Progressive Grocer Magazine for the second time and were able to avoid any implication in a June, 2008 salmonella breakout in tomatoes that originated from nearby New Mexico, due to their hydroponic techniques. Eurofresh Farms is a user of self developed technology and is not marketing its equipment.

Aerofarms is an Ithaca, NY based group using aeroponics as the technology of choice. They cite its predictability and use cloth conveyors to grow leafy greens which push their roots through the cloth. The roots are sprayed for 5 seconds every 20 minutes with a medium of water plus nutrient that gives the roots plenty of aeration as well. They have a customer who uses their aeroponic system, who is a regional grower. They will concentrate on higher value crops such as herbs and edible salad flowers. Their R&D office in Syracuse, NY is developing relevant intellectual property and focusing on growing pharmaceuticals, cosmoceuticals and nutraceuticals to gain a foothold in other high value markets.

A&B Hydroponics is a 25 year old, established manufacturer and service operator from Australia. They offer various types of mediums, lighting, irrigation, heating & cooling systems, ozone generators, humidity controllers & water testing systems.

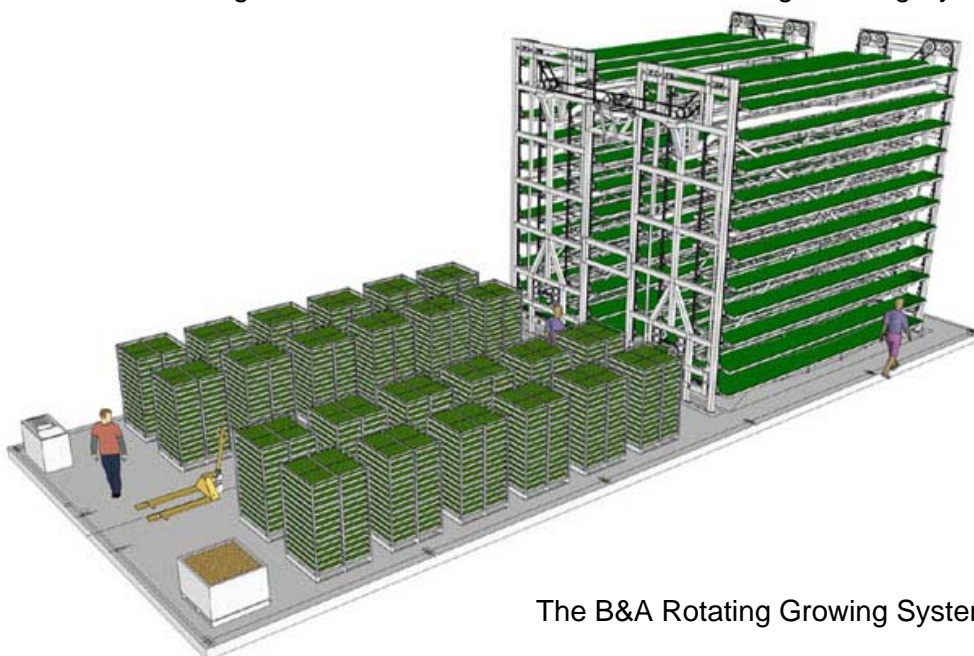
They replaced their Nutrient Film Technique (NTF) process with another called Flood and Drain in 1993 which got rid of blockages and allowing better oxygen flow to roots. They have an A frame mechanism, patented in 1989, which is good for light root crops such as strawberry's.

They also offer a variety of greenhouses to house the equipment and environmental controls. These are also available in kit form. They have a consulting business which can view crops over the internet and offer advice. This service also extends to water quality when used with their solutions for the best effect of the individual nutrients. They monitor your costs, help you keep them down and have a farm visiting business recalling an after sales computer retailer providing an on-site repair service.

They have patented a Rotating Growing System (RGS) that employs an 8 meter vertical rotating structure with slanted trays for the Flood and Drain system which has significant yields and has won awards for innovation and business ideas in Australia. They have a geographical coverage over Asia and as far as the Middle East. They claim to be able to produce 17,000 kilograms of strawberries in 320 square meters that would normally take over 3,000 square meters in a normal hydroponic farm.

Production Figures	Average Wt kg	Plants per RGS	Crops per annum	Production per annum	KG per annum
Iceberg Lettuce	1.00	1,104.00	14.00	15,456	15,456
Cos Lettuce	0.75	1,104.00	14.00	15,456	11,592
Fancy Lettuce	0.25	1,376.00	18.00	24,768	6,192
Bok Choy	0.30	1,824.00	20.00	36,480	10,944
Basil	0.25	1,824.00	20.00		
Tomatoes	6.00	256.00	3.50	896	5,376
Strawberries	0.60	2,280.00	12.50	28,500	17,100
Eggplants	8.00	128.00	2.50	320	2,560
Melons	8.00	128.00	2.50	320	2,560
Cucumbers	9.00	128.00	3.50	448	4,032
Capsicums	7.50	128.00	2.50	320	2,400
Herbs		1,328.00	17.00	22,576	-
Roses		160.00	10.00	1,600	-

Production figures from the A&B website for its Rotating Growing System.



The B&A Rotating Growing System (RGS)

The RGS is also deemed to be very suitable for the production of more farm animal fodder yields within a small space than normal fodder production methods.

Urban Barns (OTC BB: URBFB \$0.18. Market capitalization \$7.8 million). This is the only other publicly quoted hydroponic company. They use technology they either buy from others or produce themselves as a basis for their operations. They do not produce the technology for sale. They have emphasized the indoor and urban aspect of the technology and expect to be present in many urban centers where the key selling point of hydroponics is freshness and quality. They want to take abandoned warehouses and turn them into growing centers with controlled indoor climates and equipped with 'patented growing machines'. They claim to have advanced their food production technique to the point where there is no other competitive entity that does better. They intend to expand from Vancouver to cover North America, Puerto Rico and the Middle East and eventually to reach every population center and supply to fresh produce or major retail suppliers. The company recently received early stage funding by Vancouver based Socius Capital Group who will supply \$5 million over the next two years a Series A preferred 10% convertible into a unit of shares and warrants.

Aerogarden are a retail operation that offer the Aerogrow, which is a counter top kit which can grow flowers, herbs and some vegetables using an aeroponic system. It uses a plastic flower pot which holds the seeds in a small plastic cup, similar to some modern coffee machines. There is also an attached plant grow lamp. The kit comes in sizes capable of growing 3, 6, or 7 individual plants or pods. The original model, the 7 pod, retails for \$99.99 in the US and \$115.99 if you choose the model with the stainless steel trim. Another model for taller plants sells for \$169.99 and the cheapest model sells for about \$50.00. They also sell all manner of accessories including seed, spare parts, light bulbs and nutrients.

Saladacres Is an Ardrossan, Alberta based hydroponics operation that goes another step by collecting all its own non-edible biomass, and there is plenty of biomass waste in many crops, and then generating its own electricity from it. Started by Ron Tuttle in 1990 they built different designs to see what worked and what did not. Canadian government support, some persistence and then success led them to final designs that could grow fresh produce, 'short crops', in the bottom of an Alberta winter when it was dark and -40 degrees F. A greenhouse unit is a covered 2 acre plot with 20 smaller greenhouses, a nursery and a service building with computer controls and an access road. They grow about 1 short crop per month. As the cost of heating fuels climbed, the pressure for an alternative fuel source grew and they adopted a biomass solution by using biomass from outside the operation. Tree cellulose, straw, agricultural waste and cardboard and paper was collected. They can put extra CO₂ back into the greenhouses to enhance the growth of the crops and actually sell carbon credits. They grow a wide variety of crops, including medicinal herbs and also have a cold pressed electrolyte, mineral and antioxidant (EMA) juice from the roots and leaves of vegetables. They also address products in other areas such as selling plants, herbal teas, baby foods, essential oils, health food medicines, salad dressings, cosmetics and edible flowers. Since they can grow in the winter they can also avoid more food miles and cut costs so that they can ensure a healthy market share for their produce. They intend to build locations in TX, FL, OH, MN and other US locations and are interested in partnerships and joint ventures. They place a priority on being totally sustainable and off-grid, without depleting any soils and

very small amounts of water. They actually purify water from natural sources, such as lakes, rivers, lagoons etc.

VII. Chronology of Events since 2005 – the Valcent Name Change

On May 2, 2005, Nettron.Com, Inc. which was founded in 1996 changed its name to Valcent Products Inc. It also purchased the license for worldwide sales of the products of MK Enterprises, of El Paso, TX. The president of MK Enterprises was a Mr. Glen Kertz who now became the CEO of Valcent. Valcent agreed to pay 20 million common shares and a royalty for a period, for each of three MK Enterprise products, subject to a minimum of \$50,000 per year. Total fees plus royalties amounted to \$400,000 annually.

Valcent delisted from the Toronto Stock Exchange and listed on the OTC Bulletin Board as a foreign private issuer with a 3 for 1 reverse split effective May 3rd. The three direct response TV marketed products for which Valcent had acquired the global licenses were a sonic skin care product called Nova, the ‘Dust Wolf’ vacuum cleaner for irregular surfaces like venetian blinds and computer keyboards, and the Tomorrow Garden Kit, a live herb garden for domestic use. All the products were professionally marketed through internet and TV infomercials. Valcent owns over 50 patents for plant technologies for such areas as causing plants to grow up to 20% faster, a membrane that keeps the plants fresh for up to 6 months without watering and a method for turning CO₂ into biomass at an accelerated rate. Glen Kertz holds over 20 US and foreign patents in the personal skin care sector.

The horticultural product gave birth to today’s VertiCrop and AlphaCrop products and emerged out of a proprietary MK Enterprises plant tissue culture (PTC) process that mass replicated genetically identical plants. The kit promised fresh plants that only required ambient light. The rubric explained that fresh herbs had a shelf life of 7 days and most herb vendors would normally write off 20% of the crop as perishable losses. On the other hand, the Tomorrow’s Garden Kit promised a long shelf life and consistent, high quality herbs.

The Algae Project

In May of 2006 Sweetwater Capital of Vancouver was engaged in the role of consultant and investor relations (IR) to the company. At this time, Glen Kertz was developing an algae growing system building on 1970’s DOE research, the Carter Administration’s “Aquatic Species” program which concluded that up to 10,000 gallons of algae oil could be generated from a 1 acre pond of algae. Challenges included interruption of the process by the wrong algae species as well as evaporating water. Both of these problems were addressed by Glen Kertz’s vertical approach. He grew the algae in vertically suspended plastic bioreactors through which a circulating medium of algae, nutrients and water was pumped.

The US Department of Agriculture expected that by 2010, over 200 billion barrels of biodiesel would be produced in the US, Valcent aimed at a target of 4,286 barrels (180,000 gallons) of algae oil per acre which would absorb large amounts of CO₂ as the algae grew, priced at approximately \$20 per barrel. It would also not require the land to be in any way agricultural. Mr. Kertz originally expected a demonstration plant could be built by July of 2007 and that a commercial demonstration of 1,000 acres might produce 4 million barrels of oil annually sequestering 2.7 million tons of CO₂, and generating significant revenues from carbon credits.

In October, 2006, Global Green Solutions Inc. acquired a 70% joint venture interest in the project for \$2.5 million and 4.5% royalties to be paid to Valcent. The plant was to be built in El Paso. Any progress on a consumer model was to be shared with Global Green Solutions taking a 30% interest. The joint venture project was named "Vertigro" and arrangements were made for a demonstration reactor to be under way by the end of February, 2007. It is important to distinguish here between Vertigro, the algae operation and VertiCrop, the vegetable growing activity both of which shared the idea of growing either type of plant in a vertical stack and making much more use of the available ground space. This makes it very convenient for places like cities where space is already at a premium.

Forecasts for 2007 revenues from the Nova Skin care product were at the time in the range of \$70 million with a pre-tax profit of \$12 million or 25 cents per share. A February live infomercial test received initial orders where 67% had follow on orders for replacement pads and skin creams and the product was included in a late February Oscar party bag for the largest New York based Oscar-viewing set.

In January, 2007 Valcent completed a PIPE for \$2 million with accredited institutional investors. It consisted of a 6% convertible to a unit for \$0.50 consisting of one Valcent common share and a warrant for an additional whole share at \$0.70 which expired in December 2008. The interest was cumulative to be paid either when they could or at the end of the term.

In July of 2007 Valcent negotiated an increase in its carried interest for the joint venture with Global Green Solutions of 20% to a total of 50%. Later that July, Global Green Solutions Inc. and SGC Energia, a Portuguese biofuel energy company, formed a European biodiesel feedstock company, Vertigro SCE Energia, as part of the geographic strategic growth of the operation. European demand for diesel is partly enhanced by the rapid growth there of diesel cars which amount to 40% of the total vehicle numbers.

The Emergence of VertiCrop

By mid September of 2007 Valcent was able to release news of their VertiCrop system or high density vertical growing (HDVG) system. Developed over the previous 7 years in conjunction with an R&D partner called Pagic, Inc., VertiCrop was designed to grow vegetables and leafy crops with more efficiency and with greater food value than in agricultural field conditions and to exploit verticality. Capable of producing 20 times the crop per acre for only 5% of the water a field crop absorbs by growing each plant on a closely spaced pocket in a clear vertical panel that moves on an overhead conveyor system. It can work in a variety of environments, urban or country, desert or cold northern climates. The system uses no herbicides or pesticides. In particular the system offers the advantages of much lower food miles, since the food was grown close to where it is consumed reducing transportation costs as well as being scalable and offering a greater range of vegetables. Revenues for the system were expected to begin in the second quarter of 2008. Valcent owns 100% of the rights to the technology subject to a 4.5% interest in the revenues by Pagic, Inc.

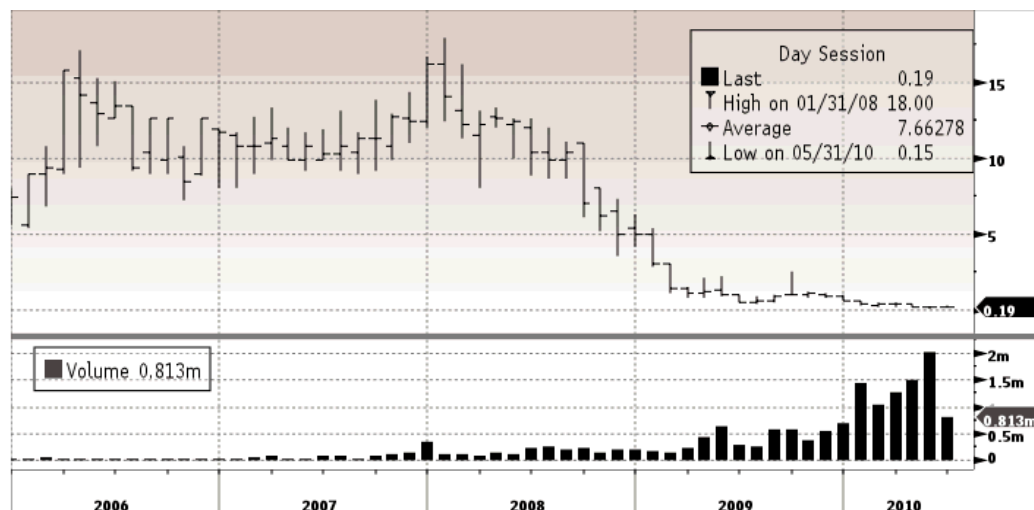
At the close of 2007 Valcent also closed on a private placement of \$3.544 million at \$0.60 per unit for 5,907 million units. The proceeds were to be used for R&D and working capital. Also at the close of 2007 new information from the algae production facility in El Paso arrived after a 90 day test run. 276 tons of algae biomass could be

grown per acre per year delivering 33,000 gallons of algae oil. 90% of the weight of the algae biomass represents CO₂ captured from the atmosphere in photosynthesis. Also in late December, the VertiCrop system was proven with lettuce, spinach, other micro-greens, alfalfa, certain strains of rice, herbs, strawberries, mint, beets, wheat grass, etc (List of amenable crops in the Appendix). Initial data suggest that lettuce can grow at a rate of 4 million heads per acre per year in a 32 day growing cycle and at a lower cost than field grown lettuce. Normal field grown lettuce may lose up to 50% of its nutritional value if not eaten within 24 hours. The system is fully automated. Again, contracts were expected by the 2nd quarter of 2008.

By March of 2008 the company was able to say that the VertiCrop module would retail for \$565,000 for a 1/8 acre size or 5,445 square feet and containing 1,320 growing panels. Plants can be simultaneously harvested and planted. On August 7th 2008 Valcent shares were the subject of a cease trading order after the company failed to file an annual report on time. This reflected the intense pressure on the company to perform with as few employees as possible. The filing was made and on August 23rd, a revocation of the Cease Trading order was issued.

On September 3rd, news was released of the signing of a Letter of Agreement with Hydrogenics for the exclusive use of the VertiCrop High Density Vertical Growing System (HDVGS) for vegetables, excluding grains, in Australia for \$2.5 million. Valcent was selling units at \$0.60 with a half warrant. Each whole warrant could be exchanged for a share at \$0.75 for two years. Drought conditions in Australia had enhanced the attractiveness of this solution. As of this quarter it also became clear that the company had suffered 15 consecutive loss making quarters. The promise of the various businesses was not developing. Not to be outdone, Canadian's in the shape of a private Alberta company also approached Valcent for the exclusive use of Valcent's HDVGS system for vegetables in the province. This time the deal was for \$1.5 million at \$0.60 per unit with a whole 24 month warrant per share, at \$0.75. The Alberta company was very aware that in some seasons, fresh produce was flown or driven all the way from Mexico. This solution was a sensible and low cost method to ensure fresh, low food-mile-food, grown locally.

In September and October of 2008 the US markets were particularly hard hit by sellers. Valcent stock declined from \$10.44 to \$6.12 in the period or -41.4% compared to the NEX Index drop of over 52% just for these two months alone. Perhaps Valcent stock was partially "spared" because of the two licensing agreements or simply because of its illiquidity.



In any case, at the start of October, Valcent announced its intent to purchase the remaining 50% interest in the Vertigro joint venture from Global Green Solutions Inc. They agreed to pay \$5 million along with 5 million common shares of Valcent. While this certainly showed confidence in the path of the algae activity it also simplified the story for investors who until now had been worrying about the complexity of the joint venture arrangement. Given that the price in the above chart is post a 1 for 18 reverse split you can see that in 2008 the stock price was declining fast putting such deals under market threat. Notice the rising volumes in 2010 which are partly due to a lower price, but also show accumulation.

Now Valcent intended to be in production with Vertigro in the first quarter of 2009 with a 100 panel algae bioreactor. Conversely this also released Global Green Solutions to focus on their biomass steam generation systems. They also intended to be up and running with the first VertiCrop system by February. The winter of 2008 must have been a stormy one within the company. By January 2009, the effects of the market declines had depressed the price and the spirits of the market, but it was also having an effect on the structure of Valcent.

The VertiCrop activity was plucked away from El Paso and planted in Valcent EU, Cornwall, England. Negotiations had been ongoing with Paignton Zoological Gardens for a single unit. The zoo saw its chance to participate and obtain improved nutritional food for the animals without the miles to get there. The half million annual visitors to the zoo would also have a new attraction and it was to be finished by May, 2009. In addition, the installation was to be a feature of the 9th International Conference on Environmental Enrichment (ICEE9). Valcent (EU) Limited, had exclusive global rights to the technology, including in the US. Valcent was a sponsor of the conference and also had a booth at the Warwickshire Royal Agricultural Show, showing off the hydroponic technology. The company was aggressively getting its marketing act in gear. Valcent (EU) Limited also successfully exhibited VertiCrop at the IPM Essen in Dusseldorf as well.

At the same time, advanced negotiations were also underway in the UAE and Saudi Arabia. Valcent exhibited at the International Plants Expo Middle East (IPM Dubai) in March, 2009. Valcent (EU) Limited also had a close relationship with the Eden Project, a major horticultural themed center in northern Cornwall that served as a partner in the sale of the Tomorrow's Garden individual plants in small biomes, which was one of the original products inherited from MK Enterprises. These plants were also sold by the Natural History Museum as well as at Kew Gardens both in London.

After the December quarter ended, the tally of consecutive loss making quarters was now 17. After all the shows and efforts by the UK Valcent (EU) Limited, there were now over 70 potential customers expressing interest in the product. The company submitted quotations for over \$6 million in proposed deliveries in the coming 6 to 9 months. Over 20 enquiries came from the UK alone and Valcent returned to Dubai to continue negotiations.

In April 2009, Glen Kertz resigned from his duties as Director, CEO and President of Valcent and its subsidiaries including acting as a director of the Vertigro algae technologies. He remains associated with the company as a technical consultant. The mothballing of the algae activity was accomplished with much disappointment for an activity that looked like one of the early winners in a space now crowded with over 100 upstart companies, very few of which had the resources of laboratories, equipment and greenhouses afforded by the investment in Valcent. There is a

possibility that the algae business can restart in the future when funding once again becomes available and the company can capitalize on the intellectual patents and new personnel, and with help from all the new information about algae science from the professional environment.

Restructuring in 2009 after the Credit Markets Tightened

The company needed to substantially reduce its debt to fund its business plans. They implemented a debt to equity swap by issuing mostly restricted and some tradable units. In May of 2009, Valcent issued 528,805,109 new shares to make a total of 591,094,635 shares in settlement of debts of \$10,751,224 with various creditors. One new source of capital provided \$500,000 in exchange for a 10% convertible converting automatically to 4 million post consolidation units which represented a valuation of \$0.125 cents per share with a third of a warrant per share, all tradable. Each full warrant was exchangeable for a single share at \$0.45 with a cashless option upon shareholder approval for a reverse split was received. After the approval, that same investor agreed to pay another \$1.5 million in exchange for 12 million similar units.

Shareholder approval was sought, and at a shareholders meeting held on June 22, was received for a reverse split of 1 share for every 18 existing shares which resulting in outstanding shares reducing to 32,831,771. 87% of the new shares had lock up arrangements until January 1, 2010 when a small amount were allowed to be sold, amounting to a maximum of 25% of the total shares issued in any subsequent quarter.

In June, 2009 Valcent announced it had negotiated a conditional purchase agreement with Pagic LP to acquire all ownership rights to the intellectual property relating to its VertiCrop and Tomorrow Garden products. This agreement terminated the previous master license agreement and significantly the annual royalty burden. Valcent agreed to pay \$2 million and 3% of its common stock once all conditions are fulfilled. \$65,000 was paid on signing the agreement and monthly payments which are approximately 3% of gross monthly revenues with a minimum of \$12,000 until the full \$2 million has been paid with up to 10 years to complete payments with the possibility of completing the payout at any time. Ownership of the technologies remains in escrow until the payments are complete. As of July, 2009, the company emerged from its restructuring with very little debt, a new stock ticker (VCTZF) which it has today, and a focused commercial mandate to sell the VertiCrop system, a mothballed algae operation, new management and a promising future.

Thanks to the expertise of Vorticom, a PR firm in New York, Valcent has a trail of articles highlighting its activities in the algae and hydroponics spheres. Googling the company results in a range of articles in the print and broadcast outlets such as BBC, NBC, CNBC, Bloomberg TV, Time Magazine and the Houston Chronicle. An eco-documentary film, "Beanstalk" was made by Antibody Films, concerning global farming practices and highlighted the importance of the ability of vertical farming to generate more food per acre using less water. Chris Bradford was interviewed discussing Valcent's initiatives.

Launching of the Paignton Zoo Installation

In August of 2009, the Paignton Zoo, known since 1923 for its conservation and botanical expertise, initiated the very first VertiCrop system with its first crop of lettuce. It is capable of growing 112,000 heads of lettuce every 3 to 4 weeks or over 1.3 million a year and is expected to reduce the food bill by over US \$149,000 annually. The zoo installation has become the focus point for visits by interested parties, including this author. This success probably distracted management who again were preoccupied enough that key filings were late again and stock trading was halted. On September 30 the company held a launch event at the Zoo. In its first 60 days the Paignton Zoo installation validated up to that point, all its operating costs and yields. The event led to much activity for the company. The BBC's TV personality, John Craven who hosts a farming events program called "Countrylife" referred to VertiCrop as one of the answers to the pressing problems of food production. An article by Emma Ritch of the Cleantech Group was just one of many events that followed the Paignton Zoo launch and featured an interview with then CEO, Chris Bradford

Growing in Dark Buildings – Joint Venture with Philips

Also in August, the company introduced a version of the system that is designed to be used in dark buildings such as industrial warehouses cellars or even caves where no natural light can reach. A joint venture with Phillips, using heat free, light emitting diodes (LED's) allows the plants to receive all the necessary light energy they need to photosynthesize properly. This enables the units to be used in geographies which are normally cold and dark and which normally will spend more money transporting food items from farms in other countries, increasing food miles, every one of which is emitting more CO₂.

Awarded Discretionary Honor by the Royal Horticultural Society

In October, 2009, the UK Royal Horticultural Society (RHS) awarded the VertiCrop system a special discretionary honor at the "Southwest in Bloom" awards, one of 18 regional competitions which form part of "Britain in Bloom", the largest European horticultural event. Founded in 1804 the RHS is the International Registration Authority for more categories of plants than any other global institution. It is the world's leading horticultural organization with active science and educational departments. The RHS competition focuses on environmental friendliness and sustainability.

Stephen Kennedy Smith Jr. and Robert F. Kennedy Jr.

In October, 2009, Stephen Kennedy Smith Jr., nephew of former Senator Edward Kennedy of Massachusetts, engaged his Boston based Em-link LLC, to help Valcent launch the VertiCrop system in the USA. Em-link LLC is focused on sustainable development and employs veterans in all its projects. Smith is on the board of the John F. Kennedy Library Corporation. He worked in the United States Senate and also with a nonprofit group affiliated with Harvard University called the Conflict Management Group. Mr. Smith was also a teaching fellow at Harvard University and Law School and Assistant District Attorney in New York. The family is impressed enough by the technology that they are keen to implement installations in cities all over the USA including Denver and Manhattan. He cited the way that the system permits growing in only 7,000 square feet, what a normal farm would grow with ten to

sixty acres as well as the reduction in carbon emissions from reduced transportation and fresher and more nutritious foods and American jobs and food security.

In December, Robert F. Kennedy Jr., the cousin of Stephen Kennedy Smith and Chairman of the National Resources Defense Counsel (NRDC), announced that he would be joining the Valcent advisory board. The news release listed all the benefits of the technology adding that it was also potentially useful in defense and foreign aid as well. At this time Stephen Kennedy Smith also announced a project to have an installation operating on a Manhattan rooftop near City Hall “in the next few months”.

On January 26, 2010, Robert Kennedy made a presentation on vertical farming and urban agriculture at the 78th winter meeting of the US Conference of Mayors, in Washington, DC. They were able to elucidate the advantages of the VertiCrop system to a critical market segment. Stephen Kennedy Smith said that many mayors of towns such as San Francisco, Providence, Denver, Salt Lake City and a number of others will be interested in developing vertical farms in this coming fiscal year. Among other key persons and speakers present on that occasion were First Lady Michele Obama, Nancy Pelosi, Energy Secretary Steven Chu, Housing and Urban Development Secretary Shaun Donovan, Environmental Protection Agency Administrator Lisa Jackson, Labor Secretary Hilda Solis and Agriculture Secretary Tom Vilsack.

UK Houses of Parliament Back VertiCrop

On October 17th, The Herald Express of Devon, added to the string of remarkable publicity with the news of a petition tabled in Westminster, London by Adrian Sanders, Member of Parliament (MP) for the Cornish town of Torbay. The petition was backed by several Members of Parliament (MP's) who recognized its potential as a food, fuel and water solution. In particular they praised the fact that the food was organic and that it “should not be prevented from being described as such”, and called for the British Government to support the systems wherever possible.

Time Magazine Names VertiCrop to be 16th in the Top 50 Best Innovations

On November 13, 2009, the weekly magazine was published with the top 50 innovations. VertiCrop was ranked #16. This relatively high ranking within the top 50 was a reaction to the breakthrough character of more food with less water and space. After a week, Time Magazine readers were given the option to re-arrange the rankings of the various technologies presented. VertiCrop emerged at number 7.

The Dubai Forum – January 2010

After the successful introduction of VertiCrop to Middle Eastern markets at the IPM Horticultural Exhibition held in Dubai in March 2009, they went for a second time in January 2010. Valcent EU presented at the Dubai Forum in the world's tallest building, the Burj Khalife, where they were invited to attend by the “Brand Dubai” group who recognized the importance of the VertiCrop system. Tom Bentley, Business Development Manager made the presentation which was prolonged by questions from the floor reflecting the interest in this technology. The forum was established by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister to the United Arab Emirates and Ruler of Dubai, as a platform for the discussion of topics including sustainability.

Introduction of AlphaCrop

In March of 2010 AlphaCrop was introduced in Launceston, UK, the site of the headquarters of Valcent EU. Designed for smaller commercial or amateur growers it makes it possible to grow smaller root crops such as strawberries, baby carrots or salad potatoes. It can be used hydroponically or with a growing media such as compost. Nearby Launceston College, a specialist technology center preparing students for science courses was the first buyer of an AlphaCrop unit.

The GROW 2010 International Hydroponics Exhibition, Manchester, UK

An AlphaCrop unit was on display at this exhibition through the services of Ikon International. They displayed the 'hobby grower' version of the prototype at their stand. Ikon will be a distributor via 300 retailers.

“Launch”

In March of 2010 a collaborative forum including NASA, USAID, the US State Department, the Pacific Institute, Sandia National Labs, the Water Center of the Earth Institute and leaders from government, business, science, engineering, communications and sustainability all listened (weblink in appendix) as Stephen Kennedy Smith present the VertiCrop technology against the backdrop of the launch of Space Shuttle STS-131. The group is a forum to champion ideas addressing sustainability challenges. Valcent Products Inc., was named one of the top ten companies in the world for a sustainable future from a range of 150 competing technologies.

First Revenue - June 2010

In late June of 2010, the news arrived after a long dry spell that the first confirmed order for a VertiCrop had come from a Hong Kong based group called VF Innovations Ltd., a company created specifically to foster innovation in vertical farming. They are in discussions with Valcent to manufacture and distribute the VertiCrop system to China. They expect to have the initial unit working within 18 weeks and then to add more with the goal of providing almost one quarter of the fresh vegetables grown in Hong Kong in a single day or 44 tons. Hong Kong consumes over 1,000 tons of vegetables on a daily basis and the goal of the partnership is to produce 10 of these tons per day within 24 months.

VI. Changes in Personnel

In April 2009 during the reorganization of the company, Glen Kertz was replaced as CEO by Chris Bradford who took over at the Launceston address in the UK. In December of 2009 Robert F. Kennedy joined the Board of Advisors after being introduced to the technology by his nephew, Stephen Kennedy Smith. In January 2010, George Orr, resigned as CFO and Director. On February 26, 2010, Mr. George Stapleton resigned as a Director.

In April of 2010, Stephen Kenneth Fane joined the Valcent Advisory Board. In June 2010, Gerry Jardine, resigned as Director after his role of supervising the restructuring of the company was complete. He will remain associated on a consulting basis.

VII. P&L and Balance Sheet

This proforma view of the growth of revenues illustrates that over 13 VertiCrop systems are expected to sell before the end of the 2010 financial year and 7 AlphaCrop systems. Of the 13, four will be owned and operated by Valcent as proof of concept installations, available for joint venture or partnership or outright sales. Revenues from these installations will be added to total revenues. Another four will be built in 2011 and are likely to remain a key part of the cash flow and R&D picture. We think it very likely that there will be a ‘toe in the water’ approach to ownership of the units until operational risks are better understood. As de-risking occurs there is the likelihood that buyers will start to come in for many more than just one or two at a time.

Each crop is different. They take up different space on the hangers, they have optimal temperatures, and their take up of nutrients varies by species. Baby greens, micro-herbs such as basil and leafy greens are all very different. There is a premium in “living” organic crops that hydroponics can obtain but this can be offset by packaging costs. The margins are such that the company feels compelled to simply set up systems and get them operational for potential later sale so that they can take advantage of the greater than 50% IRR’s in cash from operations.

Often an operator might want to produce a blend of crops that are already sold in local markets as a way to optimize crop production initially. In the appendix you can see photographs of labels for leafy greens selling at over \$15 per lb in New York City. Stephen Fane saw Whole Foods sticker prices for a large 1lb clamshell at \$16.99 in Vancouver, BC in July 2010. Smaller 4 ounce clamshells sell for \$3 - \$4. Wholesale prices for bulk green leaf are about half the retail market.

VALCENT PRODUCTS PROJECTIONS (USD \$)	Apr-2010 to Mar-2011	Apr-2011 to Mar-2012	Apr-2012 to Mar-2013
REVENUES			
Service Contracts, recurring revenue stream	884,400	1,842,000	3,852,000
Numbers of Alphacrops sold	7	35	60
Alphacrop Gross Sales Installments	70,000	700,000	1,200,000
Verticrop Operating Revenues	336,000	1,176,000	1,176,000
Numbers of Verticrop sold	9	20	45
Verticrop Gross Sales Installments	14,670,000	30,000,000	63,000,000
TOTAL CASH IN	15,624,400	32,542,000	68,052,000
Verticrop COGS	(7,361,787)	(16,921,840)	(35,387,040)
Alphacrop COGS	(1,068,380)	(1,902,955)	(2,127,175)
Service Costs	(96,865)	(290,047)	(1,238,038)
TOTAL DIRECT COST OF GOODS	(8,527,032)	(19,114,842)	(38,752,253)
Valcent EU - Operating	(1,303,535)	(1,533,621)	(1,149,569)
Valcent EU - Personnel	(705,735)	(1,223,634)	(1,429,110)
Valcent America - Operating and Personnel	(300,000)	(553,153)	(753,816)
PAGIC - Verticrop IP Payments - Royalties	(223,307)	(539,440)	(1,328,522)
TOTAL VALCENT MANUFACTURING - Operating	(257,386)	(233,850)	(680,520)
TOTAL OPERATING COSTS	(2,789,962)	(4,083,698)	(5,341,537)
Accounting	(383,588)	(430,719)	(297,129)
SG&A	(569,570)	(805,797)	(1,304,000)
TOTAL PUBLIC COSTS	(953,158)	(1,236,516)	(1,601,129)
EBITDA	3,354,248 21%	8,106,944 25%	22,357,081 33%

On the basis of \$3.3 million by March 2011, with an EBITDA multiple of 8 times we reach a share price indication of \$0.40 on the fully diluted shares. Using the same multiple the stock once again moves above \$0.90 by the end of March 2012. The S&P 500 currently has a market multiple of earnings of approximately 13 times. This for a company which is in full growth mode with the arrival of new leadership talent, strong alliances and a market 'hungry' to see the field results before committing to potentially thousands of systems.

The balance sheet shows the effects of the capital raise in 2008 which boosted assets but also increased common stock and losses as the company reorganized. Then we have the effect of the debt to equity swap dropping total liabilities and increasing shareholder equity. The company intends to continue to pay down debt and raise capital to bring them to cash flow positive which I believe will occur in early 2011. Part of the liabilities is represented by toxic debt taken on at the height of the credit crunch. This debt has been mitigated by a strong relationship with the lender and reduced to just above a half million dollars. The intention is to rapidly pay it down or convert it to equity. While each machine costs \$1.6 million, it would take roughly 10 years to pay back the original cost, if it wasn't for the fact that the normal method to finance things in the farming sector is to take on 85% debt. Using this leverage the returns become more than satisfactory and totally normal for the sector.

Period Ending	31-Mar-09	31-Mar-08	31-Mar-07
Current Assets			
Cash And Cash Equivalents	180	160	273
Net Receivables	737	452	400
Inventory	27	604	1,070
Other Current Assets	82	2,074	247
Total Current Assets	1,026	3,290	1,990
Property Plant and Equipment	857	1,110	302
Intangible Assets	-	-	1,130
Other Assets	-	199	102
Total Assets	1,883	4,599	3,524
Current Liabilities			
Accounts Payable	583	2,247	1,052
Short/Current Long Term Debt	2,126	5,288	4,600
Total Current Liabilities	2,709	7,535	5,652
Long Term Debt	-	155	169
Total Liabilities	2,709	7,690	5,821
Stockholders' Equity			
Common Stock	17,672	16,500	6,783
Retained Earnings	(37,733)	(28,492)	(15,502)
Capital Surplus	8,621	8,900	2,816
Other Stockholder Equity	10,614	-	3,607
Total Stockholder Equity	(826)	(3,092)	(2,296)
Total Assets	1,883	4,598	3,525

VIII. Appendix

Patents

Valcent Products, Inc., has 29 patents of which four have been granted. They concern the High Density Vertical Growth System (HDVGS) and there are 8 patents applied for of which 3 in the US and 5 internationally. The algae technology gave rise

to applications for 17 patents of which none have yet been granted and 15 are international. After the Pagic, Inc., negotiations with Glen Kertz, Valcent own the rights to the granted and applied for patent portfolio concerning plant propagation and hydroponics as well as new patents applied for under the Valcent (EU) Limited name for the AlphaCrop, subject to payments made into an escrow account. The company also has the rights to trademarks.

Current Market Prices July 4, 2010

I visited 4 local grocery retailers in Tribeca, New York which included two Korean deli's as well as a Food Emporium and Whole Foods. I looked at the prices of

Prices per lb for Fresh Produce in Local Tribeca Retailers July 2010	Food Emporium	Whole Foods	Morgans Market	Picnic Market
Grape Tomatoes	4.99	3.99		
Hot House Tomatoes	3.99	4.99		
Holland Tomatoes			3.99	
Stem (Cluster, Vine) Tomatoes	4.99	3.99	2.99	3.29
Plum (Roma) Tomatoes		1.49	0.99	2.29
Papa Joe's Tomatoes	3.99			
Campani Tomatoes	4.99	3.99		
Iceberg Lettuce	3.49		2.99	
Radiccio Lettuce	4.00			
Red Leaf Lettuce	2.99	2.49		2.99
Baby Lettuce		14.37		
Green Leaf Lettuce	2.99		1.79	
Romaine Lettuce	11.62	14.37	1.79	3.19
Butter Lettuce		2.49		
Boston Lettuce	2.49	2.49	1.49	1.89
Arugula		14.37	1.49	
Baby Spinach	15.97	12.77	2.79	
Mesclun Salad		12.77		
Darker color represents the price of each lettuce or bundle				

lettuces, spinach, arugula and different types of tomato to obtain a sense of the different qualities of produce as well as the price. The pricing chart above was made after visiting the various local supermarkets using an iPhone to take pictures of the pricing labels and produce. All tomatoes were quoted in dollars per pound but many lettuces were quoted in dollars for each lettuce or bundle. The interesting discovery was the very high prices per pound of the baby leaf plants often exceeding \$15 for a pound of spinach or arugula leaves. These are the leaves that are fastest to grow since they harvest earlier. Also, in the Korean deli's, although often prices were very reasonable, presentation was awful with hand written labels. Even Food Emporium's labels were dirty and off-putting and this Whole Foods butter lettuce presentation was anything but appetizing. These prices could be the prices paid for produce directly from the hydroponic system, enhancing margins for a retailer.





Green Leaf Lettuce



On the Vine Tomatoes



Red Leaf Lettuce



Boston Lettuce



Romaine Lettuce



Share Structure

There are a total of 74,885,355 fully diluted shares of which 57,211,254 are issued and outstanding. 38,511,254 are still restricted from PIPE issues. The free float is estimated to have 9 million shares. About 11.3% of the issue is represented by warrants and 7.26% or 5,434,521 are normally about to expire. There are negotiations to extend the expiration. The strike price on these warrants is \$0.45 cents and if they can get another year that might be very worth while. 7% of the entire shares are represented by options to employees. The IP is also secured with options and Pagic, Inc., owner of the patent portfolio is being paid monthly into an escrow account for the next 3.5 years until \$3.5 million has been paid. Almost 70% of the shares are owned by long term investors.

Management Profiles

Stephen Kenneth Fane

Stephen is a seasoned executive with experience and interest in strategic and tactical planning as well as the positioning of new and emerging companies. He has skills in general management, corporate finance, information systems and operations. He was a partner at Coopers & Lybrand for 13 years, a predecessor firm to Price Waterhouse Coopers and spent a total of 23 years there. In 1990 Fane acquired a 5 acre hydroponic greenhouse operation producing bell peppers which he expanded to over 125 acres under glass over 16 years. In 2002 he merged this with another large scale producer and took the combined entity public as an income Trust on the Canadian TSX raising CAD \$70 million. Fane was the CEO of Hot House Growers Income Fund from 2003 to October 2006 when it was merged yet again with another large producer to become one of the largest greenhouse production and marketing companies in the world. Today that group is called Village Farms International (VFF CN, CAD \$ 1.20) and produces tomatoes, cucumbers and bell peppers for the supermarket market. Fane serves as an advisor to the Board of Valcent on strategic and tactical issues. He earned a Bachelor of Commerce at UBC in 1970 and became a Chartered Accountant (CA) in 1972. In 1987 he became a Certified Management Consultant (CMC) and a Certified Information System Auditor in 1979 (CISA). In 1997 he became a fellow of the Institute of Chartered Accountants (FCA). He created models to estimate base unit costs including engineering, building, site services, erection costs, crop handling and soft costs for the Leafy Green Micro-Herb Crop Model and produced detailed annual operating budgets and P&L statements for typical base case units over 20 years.

Board of Advisors

Robert F. Kennedy

Mr. Kennedy was named one of Time Magazine's "Hero's of the Planet" for his success in helping Riverkeeper lead the fight to restore the Hudson River. He serves as Chief Prosecuting Attorney for the Hudson Riverkeeper and President of The Waterkeeper Alliance. He is also a Clinical Professor and Supervising Attorney at Pace University School of Law's Environmental Litigation Clinic and is co-host of Ring of Fire on Air America Radio. Earlier in his career he served as Assistant District Attorney in New York City. He has worked on several political campaigns including the presidential campaign of Edward M. Kennedy in 1980, Al Gore in 2000 and John Kerry in 2004.

Stephen Kennedy Smith

The son of Stephen Smith and Jean Kennedy Smith. Stephen Smith worked in the White House staff of President Kennedy, managed political campaigns and ran the business affairs of the Kennedy family. Jean Kennedy Smith is the sister of President Kennedy and served as US Ambassador to Ireland under President Clinton. She is the last surviving member of President Kennedy's brothers and sisters. Stephen has an MA and an MA Ed. from Harvard University and the Harvard School of Education, and a J.D. from Columbia University. He served as Deputy Campaign Manager for Senator Edward Kennedy during his Presidential and Senatorial campaigns. He has been involved in the Kennedy family financial and real estate development businesses. He has served on the staffs of the Senate Judiciary and Foreign Relations Committees. He has taught in the negotiation program at Harvard University Law School where he also served as consultant to the Conflict Management Group. He worked on the Irish peace process and with the Organization of African Unity, the World Bank and the IDB and other clients. He founded a real estate investment business specializing in sustainable and smart growth development. He received the Danforth award for excellence in teaching three times from Harvard University and is also the winner of the Lyndhurst Foundation prize for social and artistic achievement. He has delivered keynote presentations at the annual Family Firm Institute and the Family Office Exchange conferences, the two major family business organizations. He serves on the Kennedy family financial advisory board and on the board of the John F. Kennedy Library, the Robert F. Kennedy Memorial and the Congress on New Urbanism and on the Northeastern University School of Public Policy.

Board of Directors

Chris Bradford, current CEO. Chris was educated at Blundell's School in Tiverton, Devon and joined the family business, Bradford & Son's Limited, where he spent the first 20 years of his business career. He was Company Director and Manager of the company's Crop Services and Horticultural Division. In 1976 he was Divisional Manager for an animal feed manufacturing company in Manitoba. After being the CEO of an Ontario commodity based company he became the General Manager of a British Columbia farm supply group and later established his own food processing and farm supply consulting business in Vancouver. In 1997 he returned to the UK as a Business Development Advisor and Project Coordinator by Business Link, the UK Government's Small Business Advisory Service, later managing the Farm Business Advisory Service for the South West of England. He was later retained by a consortium of Government agencies and Food Producer groups to manage a regional program aimed at increasing public awareness of the benefits of buying locally produced food, and to establish the South West as the UK's primary area of food excellence. In November, of 2005 he was approached by Valcent to develop and market a range of products for the UK and European markets. As a result, Valcent Products (EU) Limited was registered as a UK company and wholly owned subsidiary of Valcent Products, Inc. in August 2006 Chris was appointed its Managing Director and the following year was tasked with developing the VertiCrop High Density Vegetable Growing System (HDVGS). Upon the resignation of Glen Kertz, Chris became Valcent CEO.

Robert Baker

Bob has over 20 years experience in stock brokerage, as a registered representative with Canaccord Capital Corporation, a Canadian broker/dealer, corporate finance,

and investment banking. Bob has served on the board of directors of numerous mining exploration companies including Tapestry Ventures Ltd.; Tapango Resources Ltd.; and Cierra Pacific Ventures Ltd. Additionally, Bob was president and principle executive officer of TexEn Oil & Gas, Inc. Bob currently serves as a Director and Officer for Global Green Solutions, Inc., Snowdon Resources Corporation and International Gold Corp.

Naveen Aggarwal

Naveen is the Senior Vice President of Sales and Marketing at Active Intelligence Corp. a company specializing in system integration of Oracle Retail's (Retek) retail solutions portfolio. He has 28 years of experience with a diverse set of technologies and vertical markets (Telecom, Government, Finance, Retail) in the areas of development, sales and marketing in senior management roles. He has held senior level positions with leading international companies including TIBCO Software where he was General Manager of the Global Telecom business, Sun Microsystems, Netscape and Nortel. He has evolved a philosophy of flexibility, diversity adaptability and innovation based on the core principals of building relationships and providing solutions to advance corporate goals. He was principal and co-founder of Interactive Technologies Fund, a private equity fund based in Toronto, Ontario. He is an Associate with Sweetwater Capital, responsible for the evaluation of investment opportunities and the subsequent provision of advisory support. He is a member of the Boards of Directors for Foursports, Inc., Infolynx Communications and Verrus Mobile Technologies, Inc. He was the Senior Vice President of Sales and Marketing of Retek a consulting organization (a tier 1 retail application). He established a computer lab for teachers and students with assistance from Infosys and Wipro. He was General Manager of the Telecom Line of Business managing a senior global team. He developed strategic partnerships and closed major opportunities with Cisco, Nokia and Bluetooth. He worked with NTT (Nippon Telephone and Telegraph) and the CLEC's (competitive local exchange carriers). He was director of Telecom sales for Canada at Netscape Communications and served for two years as president of the Northern Telecom (Nortel) Engineering Council.

Crops

Typical crops that can be found at any time being grown in hydroponic systems worldwide today.

Alfalfa	Herbs - Mint	Peas - Sugar Snaps
Arugula	Herbs - Oregano	Peas
Barley	Herbs - Rosemary	Peppers - Delphin
Broccoli & cauliflower	Herbs - Sage	Peppers - Goldstar
Cabbage & bok choy	Herbs - Thyme	Peppers - Luteus
Carrots (stubbies)	Leeks	Peppers - Plutona
Chard - Red	Lettuce – Boston	Peppers - Tango
Chard - Swiss	Lettuce – Buttercrunch Bibb	Radishes - White Globe
Cress	Lettuce – Butterhead	Spinach
Cucumbers	Lettuce – Green Leaf	Squash
Cucumbers - Burpee Spacemaster	Lettuce – Iceberg	Tomatoes – Campari
Cucumbers - Burpless	Lettuce – New York	Tomatoes – Cherry or grape
Cucumbers - Bush Hybrids	Lettuce – Radiccio	Tomatoes – El Ali
Cucumbers - Johnny's-Diva	Lettuce – Red Leaf	Tomatoes – Heirloom
Cucumbers - Sweet Success	Lettuce – Romaine	Tomatoes – Holland
Edible Flowers	Lettuce – Simpson	Tomatoes – Hot House
Eggplants - Black Beauty	Lettuce – Waldman's Dark Green	Tomatoes – Kumato
Green beans	Lettuces	Tomatoes – Vine, Cluster or Stem
Green onions	Melons (need room)	Tomatoes – Papa Joe's
Green peppers	Mizuna	Tomatoes – Plum, Roma
Herbs - Basil	Mustard Seed	Wheat Grass
Herbs - Chives	Onions - Spring	Zucchini
Herbs - Marjoram	Peas - Snow	

IX. Disclaimers, Certifications and Disclosures

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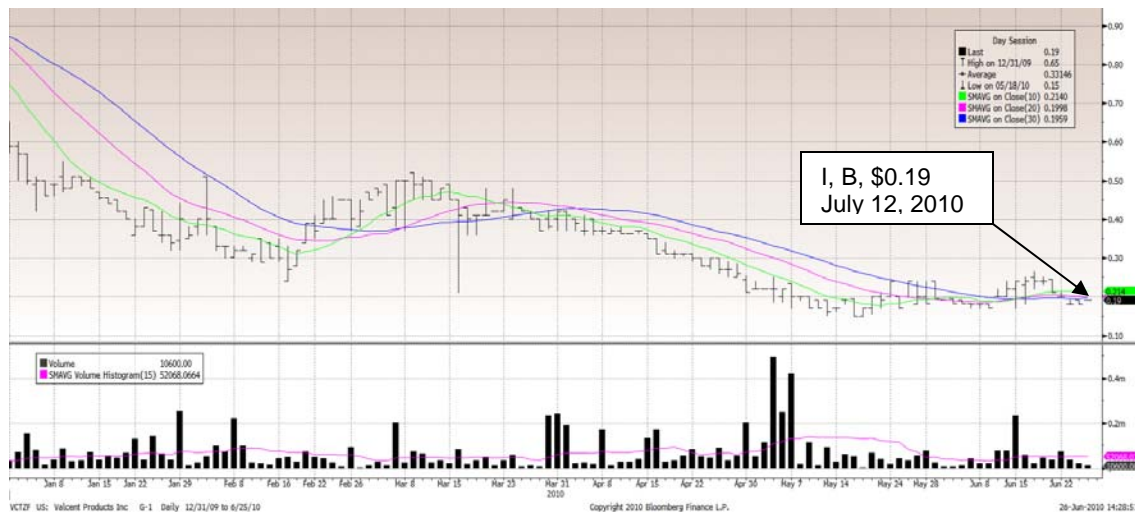
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analyst made a change to a rating or price target, except for the first box, which may only represent the first note written during the past three years.

Legend:

I: Initiating Coverage	S: Suspending Coverage	B: Buy
R: Resuming Coverage	OP: Outperform	N: Neutral
T: Transferring Coverage	MP: Market Perform	S: Sell
D: Discontinuing Coverage	UP: Underperform	

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