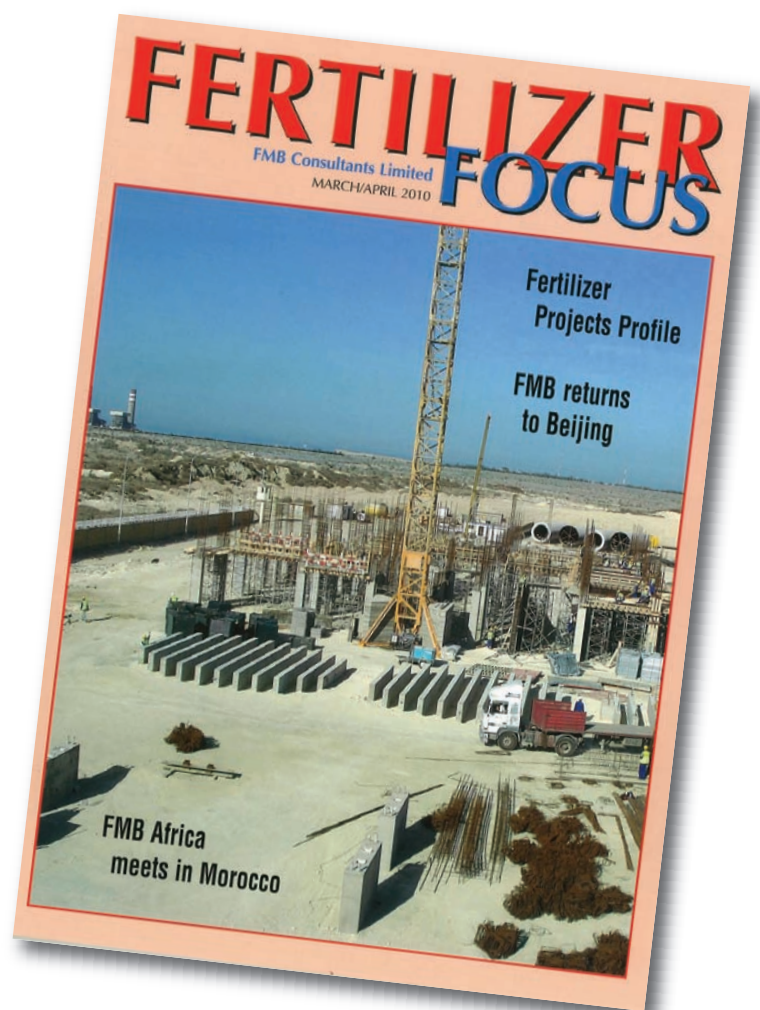


Plant Impact in the press

Fertilizer Focus - Four page article about Pi's progress

March/April 2010



Pi makes progress

Two years ago, Peter Blezard outlined the activities of Plant Impact (Pi), a UK-based R&D company targeted at bringing to market new globally-applicable pesticide and plant nutrient technologies aimed at improving crop productivity. Here, Mr. Blezard, CEO of Pi, discusses developments in the intervening period.

Focus: *It has been two years since you were last interviewed by Fertilizer Focus. For those readers that missed the original article, could you please provide some background on yourself and Plant Impact?*

Mr. Blezard: Plant Impact (Pi) was formed in March 2003 so we are almost seven years old. I am one of the original founders; the other three founders have all moved on to new activities. I have a vision, namely bringing new technology to the agricultural industry to combat the "perfect storm" that will surely challenge this



Mr. Peter Blezard.

industry in the future. Personally, I am very happy to stay with Plant Impact, in order to ensure that my vision becomes fact in the fertilizer business. My background is purely commercial; I have spent my working life travelling to many, many corners of the world, making business happen. Networking is my strength, coupled with strong commercial, sales and marketing skills. My task is to deliver value to all the parties we meet.

Focus: *Historically, what has been the focus of Pi's activities? What products are at the centre of your operations?*

Mr. Blezard: We have two aspects to the business. Last year, we completed a global licence deal with Arysta Life Science (ALS), the largest private company in crop protection I am led to believe. This was for a benign "green" pesticide that works as effectively as many leading products in the industry. Under the licencing deal, the manufacturing and marketing of this pesticide has now been licensed out to ALS in an excellent deal for both parties. ALS has over 1,000 staff in sales and marketing; they will do a good job in the launching of this product, working closely with Pi of course. With this deal in place, Pi can now focus on the second aspect of its business, specialist crop nutrition products. This will be of more interest to the readers of *Focus*, particularly those interested in what the future holds and the new technology that will be required.

In the specialist crop nutrition sector, Plant Impact now has a very firm focus on two technologies of great interest. The Company's lead technology is CaT technology, a new way to apply Calcium to crops. Our PiNT technology is a new way to apply Nitrogen to crops. Allow me to expand.

CaT and PiNT are both very innovative technologies. Innovation, however, takes many guises, including the latest methodological approaches such as GM and other emerging technologies. Here at Pi, I feel that CaT and PiNT will, in the short and medium term, successfully address some of the most pressing needs of your readers today.

Pi has developed CaT and PiNT for perceived market needs, producing scientific innovation designed for the market place rather than undertaking pure science to research a problem.

This approach involves two elements, firstly understanding the market and secondly being able intelligently to design a product to meet the needs of that market. In this context, "design" does not refer to the appearance of a product but rather how it works; good design evolves from function. For fertilizer inputs, this product design means developing technology from which products can mitigate climate change, new legislation, are sustainable, safe,

economic and environmentally effective - by design, right from the outset.

This is the market in which we now have to exist and Pi feels has to be the basis on which products now and in the future have to be developed. This is the approach which Plant Impact plc has adopted and the following examples demonstrate how it is possible to use product design to address key issues for food security. For example, we may wish to increase the nutritional value of harvestable crop products while decreasing wastage in storage and improve the ability of the crop to withstand



Plant Impact products awaiting dispatch.

drought stress or, conversely, too much water. Indeed, Pi works with many crop stresses and physiological disorders whilst a crop is growing in the field. How do we do this? Pi has highly trained agronomists working in the field. They work in tandem with our partners, assisting on the protocols and ensuring that our products deliver something very different.

CaT, for example, has a very low rate per hectare compared to any other calcium delivery systems. Application rates of one to one and a half litres per hectare are the norm. CaT is formulated in such a way as to enable the nutrient to reach all of the key parts of the plant

while it is growing, something that applications of normal calcium have failed to achieve. In addition to involving very low input quantities, CaT gives excellent marketable yield and superior quality to support that marketable yield. CaT is formulated with an analogue of a plant hormone which draws calcium into the roots and moves the nutrient from cell to cell within the plant; this patented technology is the first calcium product in the world to achieve this. Our research has shown that CaT is more effective than current calcium options, moving calcium 20 to 25 times faster and in doing so enhances calcium content in key food products, produces healthier, increased brix, enhanced shelf life, and higher yielding crops that are tolerant to abiotic and biotic stresses while retaining their quality in storage. Farmers also benefit from lower operating costs and improved profitability.

PiNT is a short for Pi Nitrogen Technology. Nitrogen fertilizers are another area crying out for innovation. The way that most nitrogen is used currently is extremely inefficient and sadly

organisms at all, is a nitrogen product that is fixed in the amine form, and is an innovatively



not much appears to have changed in 50 years. I was in America a few weeks ago and our trials on PiNT with the USDA seem to support this view.

By and large, the way in which nitrogen is delivered to the plant currently is incredibly inefficient; I am told up to 70% is lost to the environment, leading to the release of the greenhouse gas, nitrous oxide, and the leaching of nitrates, which contaminate our waterways and oceans. Plant Impact's PiNT controlled nitrogen release system ensures that nitrogen is taken up by the plant in its most useful form as amines and ammonia and reduces the amounts released to the atmosphere as nitrous oxide and leached out of the soil to contaminate water ways. PiNT improves plant growth, produces higher yields and is environmentally sustainable; it does not affect soil micro-

designed product for the 21st century needs of agriculture.

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As Focus went to press, the results of trials relating to Pi's PiNT technology, conducted by the USDA Agricultural Research Service and the Department of Crop and Soils Sciences at Pennsylvania State University, were made public. The studies compared the impact of PiNT + K with the effects of a Nitrogen : Potassium analogue fertilizer on creeping bentgrass, employed in the United States to produce sports turf. According to Pi, the findings, compiled using a normalised difference vegetation index, with identical rates used in the testing of both products, recorded quality of colouring improvement levels 2% to 3% higher for PiNT + K than those treated with analogue fertilizers, whilst a dark green colour index recorded a 4% to 7% comparative increase. Furthermore, PiNT + K provided an equally healthy sward for at least 6 weeks when used at half of the rate of the traditional nitrogen fertilizer.

Moreover, the trials showed that the use of Pi's technology resulted in less above ground growth, serving to better maintain healthy bentgrass sports turf. Studies have shown that with reduced growth habit, mowing requirements are made less frequent, lowering the consequent energy input consumed during turf maintenance. In addition, reduced nitrogen application both cuts down the level of nitrogen required to grow strong, healthy turf whilst impacting significantly on levels of nitrogen available to leach into the environment.□

Both CaT & PiNT are currently in liquid formats; Pi is working on solid formulations of both technologies. I am open to meet potential partners as we work on these globally scalable technologies.

Focus: *In the last article, you mentioned that field trials for a range of your products were in progress. Have you had any recent results from these field trials?*

Mr. Blezard: Yes, indeed. We have had our CaT technology independently scientifically assessed in readiness for a potential partner. Over 300 trials worldwide have been carried out, from grower trials to a variety of University and CRO trials. These show many benefits that point to CaT being the best in its class. In general, the improvements for the grower are increased marketable yield, increased weight, firmness, diameter, brix, skin quality and much less physiological diseases due to higher cell formation which, in turn, increases dry matter.

With regard to PiNT, some 38 trials have been undertaken, ranging from the prestigious

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On 5 February 2010, Plant Impact entered into an exclusive evaluation, development and distribution agreement with Arysta LifeScience Corporation covering Pi's InCa, Balance and Cocoa Stress Tolerance products (the Crop Nutrient Products). The agreement covers countries in North America (excluding InCa), Central and Latin America, Europe, Africa and the Far East. Initial crop targets are in high value horticulture with potential extension into some arable crops.

Pursuant to the agreement, Arysta LifeScience will have exclusivity to evaluate the Crop Nutrient Products until 31 March 2011. The evaluation of the Crop Nutrient products represents the field trial development stage referred to above and will be carried out to research standard. Once this is complete, Arysta LifeScience will ensure products are registered locally and will market and distribute these products on an exclusive basis. Detailed development and distribution agreements will be signed country by country as they come on stream.□



Trials have shown that crops of potatoes can improve when using InCa.

USDA in America to a variety of research organisations, coupled with grower trials all over the world. It has emerged that the principle benefits of PiNT are reduced rates of N applied to soil, better N utilisation by plants, reduced release of N to the environment (namely leaching into water and gaseous releases to the atmosphere), higher yield, more robust plants, better utilisation of soil nutrients, and less

susceptibility to salinity stress in both water and soil.

Focus: *In the last article, you also mentioned that your sales to date were pre-commercial. Have you made any significant progress on this front in the past two years? Has Pi been successful in spreading its sales net into new markets?*



Cherry crops also benefit from the use of InCa technology.

Mr. Blezard: We currently sell direct through distribution partners in 24 countries and look forward through partner arrangements to extend this footprint.

Focus: *Earlier, you also mentioned that you were in contact with larger distribution groups and larger manufacturers of finished products with a view to establishing licensing and partnership deals. Have you made any significant progress on this front over the past two years? Can you provide any details relating to such agreements?*

Mr. Blezard: We have completed the licensing deal as outlined above on our green pesticide. I am now working on CaT and PiNT for the next stage of our global growth plans.

Focus: *I understand that Pi recently joined the UK's Parliamentary and Scientific Committee. What does this entail? What other companies are members of this committee? What are the advantages of membership of this committee for Plant Impact?*

Mr. Blezard: There are several mainstream science and agrochemical based companies on the Parliamentary and Scientific Committee; Pi is the only SME. The benefit is that I have the ear of influential people and an eye on legislation that will affect our industry. Last year, at the behest of UK Government, I visited Brazil with a number of high level people. Currently, I am negotiating trials with EMBRAPA - the Brazilian centre for trials, similar to USDA. I was invited down to Brazil as Pi has new technology; Brazil is an exciting growth market for agriculture.

Focus: *I understand that a new Scientific Advisory Board was recently put in place by Pi. I would imagine that this SAB includes some highly qualified scientists.*

Mr. Blezard: Yes. We have two doctors and four scientists in total who have a wealth of experience. The remit of SAB is to challenge our science and to challenge our market focus with that science.

Focus: *Outside of the SAB, has Pi added any further executives to its staff?*

Mr. Blezard: Pi has a sales office in Spain and we have recruited a new agronomist to support our current manager there. Similarly, in Jordan, our office there has recruited another agronomist. Within the USA, late last year we recruited Dr. Tony Beltran as Vice President to engage with partner groups in both USA and Latin America. Internally, we have employed new support staff from PhD level through to administration.

Focus: In these economically straightened times, it must be difficult to find finance for a company of the nature of Plant Impact. How are you financing Pi? Have the financial results of the company improved or deteriorated over the last two years?

Mr. Blezard: Our sales are growing and we have a licence deal that brings cash in. However, we do seek to implement a growth plan with global partners for more scale. Our financing is from supportive shareholders; we floated on the London AIM market in 2006, trading as a public company. Pi has a long term view on our markets.

Focus: Plant Impact seems to have made significant progress in recent years, certainly over the last two years or so. What are your targets for the following two years? What progress do you hope to have made by the middle of this decade?

Mr. Blezard: I do not want to place a number on this, but I see Pi as a partner with several interested global partners operating in a collaborative way; over the next two years, these partners, with an eye to the future of agriculture, will bring positive change. This will ensure Pi benefits from growing sales and

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On 10 February 2010, Plant Impact revealed positive field trial results for its InCa product. Pi claims that these results prove that the technology can deliver significant statistical improvements to key value drivers for lettuces during validation testing.

InCa is a new Pi product, based on its CaT technology. A calcium absorption aid, InCa is geared to improving plant cell function under stressful conditions, increasing produce quality and yield, solving physiological disorders caused by calcium deficiency and extending storage/shelf life.

During French lettuce trials carried out by Eurion Consulting, specialists in the regulatory approval of agricultural inputs, InCa performed exceptionally well compared to a non-treated control and a commercial alternative on a greenhouse soilless culture of lettuce plants. The result showed that when InCa is applied as a foliar spray at 7-day intervals, the average fresh weight of lettuce increased by 9% compared to the standard and was 12% higher than the alternative calcium product. The leaves were 9% and 6% greater in number than both the standard and competing products respectively.

Furthermore, InCa was also proven to have a positive effect on transport and shelf life. Analysis of lettuces stored over time demonstrated that plants treated with InCa perform significantly better in long-term storage. After 23 days storage, InCa treated lettuces showed 150% better quality than both the standard and those treated by the competing product.

The independent field trials were conducted in accordance with the principles of Good Experimental Practice (GEP), the general requirements of the United Nations Systems Chief Executive Board (CEB) and the European and Mediterranean Plant Protection Organisation (OEPP).□

licence fees, which will enable reinvestment activities. As a result, Pi will continue to be an innovative company, with a long-term future in

this industry.

Focus: Thank you, Mr. Blezard.■

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