

## NOT ONLY IN THE TROPICS

by Giovanni Appendino

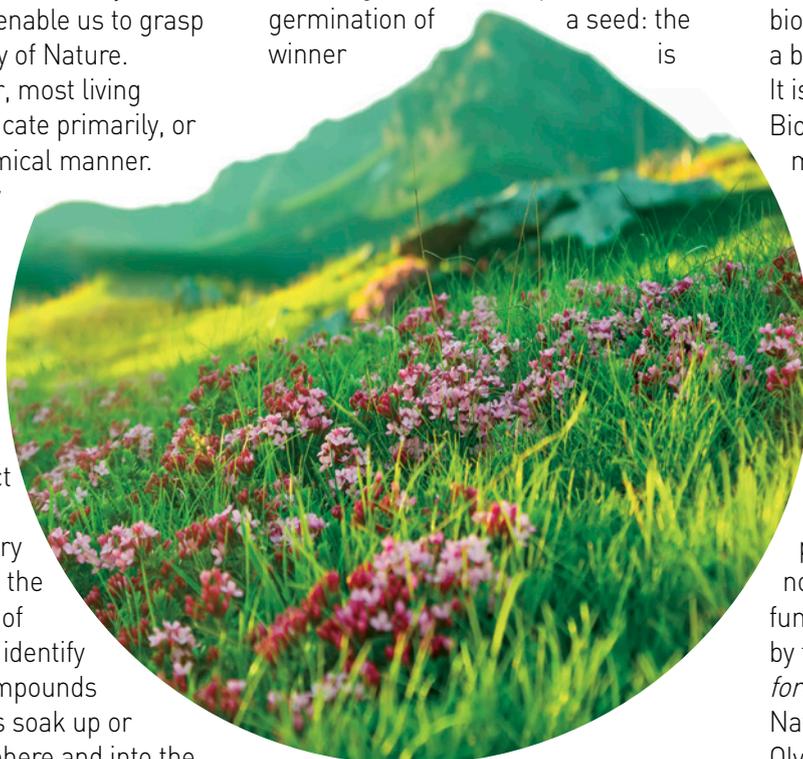
**C**learer understanding of our perceptions is becoming ever more widespread. Nevertheless, we are able to experience the exuberance of life mainly in a visual way; we sense the diversity of shapes and colors physically. Only a tiny part of our perception is “molecular”, based on the senses of taste and smell, yet these would indeed enable us to grasp the enormous variety of Nature.

Unlike Man, however, most living organisms communicate primarily, or exclusively, in a chemical manner.

A mountain meadow teems not only with grasses and wild flowers, but also with chemical compounds designed to offend, protect, communicate, attract and repel.

Advances in chemistry now allow us to read the molecular language of life: we know how to identify and characterize compounds that living organisms soak up or emit into the atmosphere and into the soil. However, we do not understand the meaning of these words and, in general, the sense of the argument that the progress of science lets us overhear. The molecular book of life is like the Etruscan language: we read it but fail to fathom what it is saying. Biodiversity is therefore a complex network of relationships between organisms living in an environment. And according to the theory of evolution, were this network not to exist, a mighty organism would have

already emerged to crowd out all others and completely colonize the Earth. Instead, our planet remains a wonderful entanglement of organisms each one of which is different and since the molecular scenario is changeable, it changes with the flowering of a species or the germination of a seed: the winner is



not necessarily the most suited to a specific environment, but the one readiest to change. Mankind indeed is hardly well-suited to anything but easily adapts to everything. Biodiversity is the exuberance of life. Compare the orderliness of a field of corn, imposed on the land by the physical force of ploughing and the chemical violence of pesticides with the apparent disorder of an alpine meadow in bloom, the result of a complex balance, or rather an

absence of conflict between the plants that inhabit it. This is why it is unthinkable to freeze biodiversity in a seed bank or in a botanical garden. It is not only in the Tropics that Biodiversity must be safeguarded: the most ancient civilizations developed in an arid environment and saw in Europe a verdant paradise, much as the way we see the Amazon nowadays. There are in fact many priceless areas of biodiversity even in “old” Europe: Sardinia and the Maritime Alps are indeed included in the world’s most important hotbeds of biodiversity. The problem is that such a variety does not interface well with research funding, which seems to be inspired by the Olympic motto *Citius, altius, fortius* (Faster, higher, stronger). Nature however is somewhat anti-Olympic, as if it had the motto *Lentius, profundius, suavius* (Slower, deeper, milder) and requires long-term investment. It is just such a long-term investment that Indena has resolved to undertake with the launch of a wide-ranging sustainability project. This is described elsewhere in these pages, and in line with the principles underwritten in the Convention on Biological Diversity (CBD) is designed to safeguard not only species of interest, but their impact on the whole environment which surrounds them.

## BEANBLOCK®: NEW RESEARCH

Focused as ever on research and development, Indena has in recent years “designed” and developed a large number of products known for their high quality and standardization, supporting preclinical and clinical studies which confirm their high potential for use in strategic areas. These include the modulation of dyslipidemia and obesity. One example is Beanblock®, a standardized extract of *Phaseolus vulgaris*

able to modulate the metabolic process through the regulation of appetite and blood sugar levels (*Battezzati et al, British Journal of Nutrition, 2013*).



A further study presented by Indena Scientific Director Paolo Morazzoni, at Vitafoods 2014 in Geneva (*Belcaro 2014, submitted*) also shows that Beanblock®,

taken regularly for 12 weeks by overweight subjects not following a strict lengthy diet, is effective for weight loss and waistline reduction.

The new data on humans underlines the enormous potential of Beanblock® in helping to manage body weight because it helps improve compliance with conventional programs within a healthy lifestyle that includes proper nutrition and exercise.

## OPTIMIZING NUTRITION: A WORKSHOP FOR THE FUTURE

Could it be that edible plants improve nutrition, reduce the risk of and even prevent certain diseases? Indena has promoted an opportunity for dialogue in Milan between the Italian nutraceutical industry and leading scholars to focus on how to make greater use of standardized extracts from edible plants in order to optimize nutrition. Academic experts attending the workshop explained how high quality extracts are obtained from food plants using the most modern research techniques. The extracts are highly standardized and reproducible; they undergo pre-clinical and clinical development in full compliance with current regulations. The aim is to

develop products which are effective, boast a very high safety profile and which become part of the so-called “initiative medicine”, based on the intake of foods that provide health benefits in addition to their nutritional value and are designed to optimize physiological functions.

The workshop showed that the synergy between the nutraceutical industry, academia and government bodies is the key to opening up new scenarios of research into the optimization of nutrition. Edible plants provide us with a priceless chemical heritage which, in addition to the more well-known secondary metabolites, also includes other lesser known secondary

compounds such as proteins and their peptides, considered to be not only mere suppliers of amino acids but also functional “fragments”, as in the case of soy and lupine.

In this context, Indena has developed an impressive array of high quality standardized products, working with the main plant foods found in Mediterranean and Asian diets, examples of which are beans, artichokes, grapes, bilberries, tea and turmeric. As illustrated in the workshop, Indena is encouraging new thinking and documentation on some of these plants, by highlighting their phytochemical value and completing their characterization with preclinical and clinical studies.

## SuSo: SUSTAINABLE SOURCING

IN-DE-NA! These three simple syllables in Italian stand for “Industria Derivati Naturali” (Natural Derivatives Industry) and reflect the fact that the entire business of the company is based on Nature. While we tend to regard Nature as a plentiful source of varieties and species from which we can obtain extraordinary substances and extracts that can be of benefit to us in many different aspects of life, we may often forget how difficult it can be for the environment to support such pressure and how much we should be thankful to all living beings involved in this process of creation and regeneration of natural resources. We in Indena have always

shown respect for natural resources and for our fellow human beings, but now is the time to do something more concrete to protect our precious environment and help local communities involved in the supply chain.

This is why Indena has recently launched the “Sustainable Sourcing Project”. A multidisciplinary team was created to assess the supply system for raw materials of plant origin, considering the aspects of sustainability and social responsibility.

Following a thorough and detailed risk analysis, the team aims to highlight potentially critical situations in the supply chain, define action priorities,

implement the necessary changes and integrate them into company policies and procedures.

At the same time, Indena is developing an internal standard that will reconcile the demand for high-quality raw materials with the principles of biodiversity and sustainability highlighted by the *Convention on Biological Diversity* (CBD) and other international organizations such as FairWild, UTZ, Fairtrade and UEFT. Suppliers will be qualified on the basis of these guidelines, in particular on specific aspects such as their proper management of natural resources, their ability to minimize the impact of cultivation and processing on

the environment and the conservation of biodiversity. While the "Sustainable Sourcing Project" will ensure compliance with all issues related to sustainability, "The Access and Benefit Sharing Project" (ABS) will address issues related to *Traditional Knowledge* and the principles of equitable benefit sharing which were introduced by the CBD (Rio, 1992) and further developed by the Nagoya Protocol (Nagoya 2010).

As yet only a few nations have put in place precise standards though have taken different approaches; most CBD member states are developing specific standards. The overall situation regarding the Nagoya principles is



changing rapidly. This is in part due to the fact that the protocol has just been ratified by 50 countries which will render it operational by October 12, 2014. Indena is well aware of playing a key role in the transition between natural

resources and the finished product. Our ABS project, in line with emerging regulations, is designed to ensure our customers effective management of the often critical initial stage in the procurement of genetic resources.

## INDENA SIGNS "BEST PRACTICE" DEAL WITH CHINESE DRUGS FIRM

A Franco-Chinese Economic Forum took place on March 27 in Bercy, under the patronage of the French Ministries of Finance and Foreign Trade and the Chinese Commerce Ministry. It was held during the visit of the Chinese President Xi Jinping organized as part of celebrations to mark the fiftieth anniversary of

diplomatic relations between the two countries. Trade agreements involving some 50 companies at the spearhead of commercial and industrial cooperation between France and China were signed at this prestigious international event. The one agreement concerning the pharmaceutical sector was drawn up by

Indena and the YouCare Pharmaceutical Group. With its approach to partnership, innovation and collaboration, this deal is considered to be an example of best practice for the entire industry. Proceedings were formally closed by Mr Xi Jinping alongside the French President, François Hollande.

## CENTEROX®: NOT ONLY A MATTER OF LOOKS

It was the illustrious Roman conqueror Julius Caesar who made famous the tradition of using laurel wreaths to crown heroes and leaders. This included himself – but perhaps it was merely a ploy to conceal his evident baldness!

The appearance of our hair has in fact always been an integral part of our personal image and is a major contributory factor in the perception we have of ourselves and indeed that of the people around us. For many people, men and women alike, thinning hair is a very serious concern, which affects not only their look but may also impair their



self-confidence. This is revealed in many scientific studies, some of which were cited as a corollary to the development of the new Indena hair care application Centerox®.

Launched at the recent in-cosmetics® show, Centetrox® is a highly purified extract of the glycoside terpenes found in asiaticoside and madecassoside *Centella asiatica*. Completely water-soluble, it is effective for strengthening hair when subjected to stresses such as traction or washing, conditions for which they were subjected experimentally in clinical pull and wash tests. Regarding the action

mechanism on the hair, an *in vitro* test has also confirmed the importance of the increase of the expression of laminin-5, one of the main constituent proteins of the basement membrane, in enhancing its resistance. Increased expression of laminin-5 is also significant for potential skin care applications, where greater effects on the dermoepidermal junction can also enhance the appearance and health of the skin.

Centerox® provides a new opportunity therefore for the formulation of active products for skin and hair care within the impressive array of Centella derivatives already offered by Indena. It is the result of the company's continuous commitment to research aimed at innovative developments in the field of Personal Care.

## IN SYNERGY WITH INDENA



Once again this year, Indena was able to bring together customers and partners to examine some of the issues of greatest interest and relevance in the field of botanical extracts. These were occasions in which to emphasize the scientific and commercial strengths of Indena products, and illustrate the results of the latest clinical trials. They also provided an opportunity to develop common strategies

to meet the specific needs of markets and customers putting the products in a local context, provide examples of successful products containing Indena extracts, and explore possible synergies.

The Asia Pacific Regional Meeting was held in Bali over three days in March. It was attended by about forty people representing key partner companies from Australia, China, India, Indonesia, Malaysia,

Japan, Korea, Taiwan and Thailand. This was also an opportunity to mark anniversaries of our partnerships as we celebrated 25 years of working with SamOh (Korea) and Menjangan Sakti (Indonesia) and 15 years with Pathway (Australia), Namsiang (Thailand) and New Chiens (Taiwan)

Two seminars in June both in China focused on personal care. The first in Shanghai was coordinated by the local distributor Biohope alongside Indena China and attracted 90 customers in the area. The second, held in Guangzhou, in the Guangdong region, was organized with the local distributor Ownsnow and attended by some 170 customers. Our thanks to all meeting organizers and participants who we look forward to seeing again at future events.

## MERIVA® SCORES EVERY TIME

For the last two years now, the medical team at Athletic Bilbao has included CurcuFit® (a supplement containing Meriva®, marketed in Spain by the company Cien Por Cien Natural) in the diet of 1st team players. Doctors who look after the athletes are excited about the product: according to their findings, Meriva® plays a key role in helping footballers retain their peak physical and mental condition even when subjected to considerable stress. The medics point out that their interest in Meriva® has mainly arisen from the dossier of scientific publications documenting its activity, efficacy and tolerability and differentiating it from other products on the market.



It was in fact this extensive scientific literature in support of Meriva® which enabled the Brazilian company Aché to register the extract, brand-named Motore®, as a drug for the treatment of osteoarthritis. The product is rapidly conquering the local market, seeing a month-on-month growth in consensus

with the medical community and patients alike: there is constant positive feedback from local teams recording the effects of Meriva®, and it is widely noted that the product's high chondroprotection action, combined with its effectiveness in limiting the use of NSAIDs, are a boon for osteoarthritis sufferers.

## SPREADING OUR SCIENCE

We want to bring what is essential to the eyes of our customers and partners and by creating a video narrative we can talk about what we do, how we do it and the people who do it in a direct and engaging manner. Our YouTube channel now plays a central role in communicating our science. Using a documentary approach, unique in the industry, we illustrate the entire production chain from planting to the finished product.

Appealing videographics help to explain complex concepts in a simple way, while the faces and words of our very own experts introduce new products. These endeavors to tell the stories behind our science enable our clients and industry professionals alike to understand and explain in turn what is behind and inside our products, the passion and the excellence that guide our work.

Our most recent productions are "Olives and their Liquid Gold", a fascinating documentary which traces the journey of Opextan® and "Beanblock®: from Beans diet to optimized nutrition" another fine example recounting the history, nature and science of the Borlotto Lamon bean extract Beanblock®.

Check us out on:  
[www.youtube.com/IndenaSpa](http://www.youtube.com/IndenaSpa)

## INDENA ON THE MENU



The functional food industry looks set to grow significantly in the coming years and promises great opportunities for Indena, especially given the growing demand for natural products which are safe, well-characterized and of high quality. These characteristics which are typical of Indena products and the company culture well suit the dynamic

and innovative food market, which offers an exciting new challenge for our fledgling Functional Food division. The drinks category covers various kinds of beverage, including health drinks; whilst confectionery, savouries and protection of the matrices themselves are just some of the many areas of technology that this industry has to offer. The new division will focus

## ECOCERT VALIDATION FOR XILOGEL<sup>®</sup> AND MILLET



Tamarind flower

Alongside Opextan<sup>®</sup>, Omegablue<sup>®</sup>, Zanthalene<sup>®</sup> and Centevita<sup>®</sup>, Xilogel<sup>®</sup> and Millet have joined the ranks of Indena extracts with ECOCERT validation. Xilogel<sup>®</sup> is extracted from the seeds of tamarind (*Tamarindus indica* L.), one of the loveliest of tropical plants. And its main use is in fact for beauty: it is compatible with multiple formulations and with its highly moisturizing and smoothing properties, Xilogel<sup>®</sup> can be used to enrich face

and body cosmetics, anti-aging and restructuring creams and lotions, and also lipsticks. Its biological activity has been demonstrated in clinical studies and in vitro, the result being soft and sensual skin. The dry extract of Millet, being rich in protein, amino acids, vitamin B, and fatty but gluten-free acids, is also particularly suitable for use in products for the restructuring of the skin, nails and hair.

on these areas as it aims to explore all the possibilities for the use of natural ingredients currently in the portfolio. The Bennett industrial facility will be at the heart of R & D to optimize the food portfolio and support the business. Strengthened by HACCP, Halal, Kosher, and GMP certification and in line with food production directives, the company will work to meet the needs of this dynamic and innovative market.

## ENOVITA<sup>®</sup> GAINS GRAS ASSESSMENT

The properties of the substances contained in grape seeds are well known. Enovita<sup>®</sup> goes further however, since it is an extract derived exclusively from the seeds of grapes used to produce white wine. The extract is standardized spectrophotometrically at  $\geq 95.0\%$  in proanthocyanidins. It is manufactured at the Indena facility in Tours following the Indena30<sup>®</sup> Quality System and meets HACCP, GMPs and ISO14001 requirements. It is also



Kosher and Halal certified. Enovita<sup>®</sup> has recently obtained GRAS assessment for use as an antioxidant and / or emulsifier in different types of foodstuffs including beverages and their base preparations, breakfast cereals, oils and condiments, ice cream, pasta and wheat-based products, full and skimmed milk, milk-based preparations and fresh or processed fruit juices. The safety profile of Enovita<sup>®</sup> is supported by extensive scientific documentation and adults may take up to 291mg per day. Alongside the already validated Opextan<sup>®</sup> and extracts of Melissa, Hops and Green Tea, Enovita<sup>®</sup> now enriches the Indena product range "Generally Recognized As Safe".

## MEDICAL DEVICES: READY TO GO

The Indena Quality System has now been enriched with another important feature, this one related to the medical device sector. This area has undergone rapid recent development as a result of significant legislative changes in the last decade. New European Regulations on medical devices to be released in 2015 are expected to provide a further boost. In order to be recognized as a "Manufacturer of Medical Devices"

in this dynamic scenario compliance with the requirements of UNI EN ISO 13485 is fundamental. In consideration of this, Indena has implemented its own dedicated Medical Device Quality Control System. This will enable the company to plan, design, develop and produce medical devices as well as to activate the Surveillance Mechanism in line with EU policy.

## SAMBA!

After years of doing business in Latin America, Indena has recently opened a subsidiary in the Brazilian city of São Paulo. Indena Brasil Ltda will play a key role in strengthening distribution capabilities throughout the continent. The objectives are to implement services for existing customers and take full advantage of development opportunities all over South America, where there are promising signs of growth in the pharmaceutical, nutrition and personal care markets, all areas of interest to Indena. Greater proximity to existing clients of course, but also an opportunity for Indena to market its highest quality extracts to new business customers, bringing with them renowned Italian excellence and over ninety years of experience in botanical extracts. Indena Brasil Ltda is managed by Alessio Tagliaferri.



## INDENA EVENTS CALENDAR

### CPhI Worldwide

Paris, France  
7-9 October 2014  
Paris Nord Villepinte  
Stand 6P69 – Hall 6

### SupplySide West

Las Vegas, USA  
6-10 October 2014  
Stand 18087

### Health Ingredients Japan

Tokyo, Japan  
8-10 October 2014  
Tokyo Big Sight Exhibition Center  
Stand 2-227

### Food Ingredients China

Shanghai, China  
1-3 April 2015  
National Exhibition and Conference Centre (Shanghai) (NECCS)  
Stand 4Y01 – Hall 4

### In-Cosmetics

Barcelona, Spain  
14-16 April 2015  
Fira Gran Via  
Stand 7K19 – Hall 7

### Vitafoods

Geneva, Switzerland  
5-7 May 2015  
Palexpo Geneva  
Stand H58 – Hall 1 & 2

### FCE Pharma

San Paolo, Brazil  
12-14 May 2015  
Transamerica Expo Center

### CPhI China

Shanghai, China  
24-26 June 2015  
SNIEC Pudong  
Stand E1C18 – Hall E1

For the complete events list, visit [indena.com](http://indena.com)



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