Passion for a better future
Everything starts with passion

It is with great pleasure that I present our Grodan story to you. The story is about sustainable cultivation aimed at leaving the world a better place in the future. It is the result of a journey which started with the formulation of our ‘new way of thinking’ and on how we can impact food systems to conserve nature and feed humanity. We involved our main stakeholders to review this way of thinking and to guide us on how best to communicate this. The result you now find in the book in front of you, a story with our vision backed up by evidence.

Our story is about passion, the Precision Growing philosophy is in our genes: higher yields while using less of the world’s valuable natural resources. The impact of Grodan on people, planet and profit is distinctive and contributes to a future-proof horticulture, providing people around the world with access to healthy food today and for generations to come.

I sincerely thank everybody who contributed to the creation of this story.

I am very pleased to have been invited to introduce this booklet outlining the Grodan story.

Wageningen UR is a research institution focused on the area of ‘healthy food and living conditions’. It is our mission ‘To explore the potential of nature to improve the quality of life’. The world is changing radically. The world’s population is growing while the population of the western world is also ageing. The pressure on land use is increasing, the climate is changing, while fossil fuels and good quality water are becoming scarcer. It is our task to make crop production more sustainable as there is a growing need for healthy, versatile, adequate and safe food. At Wageningen UR we do not just develop cutting-edge knowledge; we also help to translate this knowledge into practice worldwide.

The contribution of Grodan in a healthy and sustainable food chain makes a difference. Therefore I am happy that Grodan reached out to confirm and to enrich their story. The accurate approach they took in defining their contribution as well as their determination to seek scientific support for their claims, characterizes this organisation.

Hub Janssen
Managing Director
Grodan Group

Prof. dr. ir. Leo Marcelis
Head of Chair group Horticulture and Product Physiology
Wageningen University & Research
How to feed the world in 2050?

In 2050, the earth’s population will be 9 billion, 70% of whom will be living in urban areas. This growing urban population will need access to healthy and nutritious food. Governments and Non-Governmental Organizations (NGO’s) are promoting fresh food consumption for health reasons along with the importance of producing safe food that is sustainably grown. In parallel, consumers are becoming more health-conscious and are increasingly driven to local, natural, and sustainable quality offerings – a trend which is strongly tied to the modern focus on healthy eating.

It is estimated that we will have to produce double the amount of healthy, nutritious food with half the resources of today. This leaves us with one of today’s biggest challenges. Water, fertilisers, land and energy are crucial resources for food production. Less than 1% of the earth’s fresh water is easily available and suitable for human use. 70% of that water is used for irrigation in agriculture. Water scarcity is addressed as part of the United Nations “Agenda 2030” Sustainable Development Goals.

Reserves of fertilisers, that are crucial for the production of food, are running out. Continuous and increasing demand on land resources has had a negative impact on the area and quality of land available for food production.

So, food production has to double while using half of the resources of today
Grodan supplies innovative and sustainable growing media solutions for professional growers and home gardeners. For almost 50 years our team has been dedicated to creating the optimal environment for roots resulting in healthy and strong plants. We are driven by developing the most sustainable growing solutions and by making these accessible to communities across the globe. This is our contribution to a future-proof horticulture that will provide people around the world with access to healthy food not only today but for generations to come.

Our growing media solutions are designed for Precision Growing, which is the most sustainable way of growing. This is all about giving the plant exactly what it needs. This effective way of growing leads to a better yield and quality of fresh produce while at the same time using valuable resources in the most efficient way.

As such Grodan brings the best of sustainability together, facilitating an efficient way of producing nutritious food to keep people healthy, with a positive impact on the planet by minimising the use of resources, whilst at the same time helping growers optimise their profit to sustain their businesses in the future.

**Achieve sustainable food production for future generations**
Producing more with less is in our roots. Since we invented hydroponic stone wool growing in 1969 we have continuously evolved the Grodan approach to sustainable growing. Our first customers started growing hydroponically to avoid disinfection of the soil which was done with methyl bromide, a heavy toxic chemical. Our growing media enabled them to provide the plants with water and fertiliser much more precisely and efficiently. By doing so the yield per square meter further increased, while at the same time saving water, fertiliser and subsequently saving on costs.

Grodan can be seen as one of the Founding Fathers of Precision Growing for the horticulture industry. Today, growers make use of a wide range of innovative products for the entire growing cycle from the start of propagation till harvesting.

The Grodan approach continuously evolves
Sources used
The facts presented in this booklet are a summary of a scientific review of dr. ir. Ep Heuvelink and Prof. dr. ir. Leo Marcelis from Wageningen UR. Below you find a summary of the literature list used for the review. The full list is available on request.

Water scarcity


Water quality


Land scarcity


Nitrous oxide

Less gas emissions

Soilless cultivation emits significantly less greenhouse gasses per kg of fresh produce than soil based cultivation.

The environmental impact of a greenhouse is mainly caused by the use of fossil energy for heating. By growing hydroponically the yields increase significantly compared to growing in soil. This results in a lower energy use and hence less CO₂ emission for each kilogram of fresh food.

10-15%

More yield

Soilless cultivated fresh produce yield versus soil based cultivated yield.

Hydroponic cultivation on stone wool growing media results in a higher yield per square meter compared to cultivation in soil. In a greenhouse the ultimate climate conditions can be created for plants. This, in combination with Precision Growing, enables growers to give the plant exactly the amount of water and fertiliser it needs. This leads to a strong plant that carries more fruits.

15 - 40%

Efficiency in greenhouses

Besides the efficient use of water Precision Growing also enables efficient use of fertiliser. Excess fertiliser can be re-used. Because of Precision Growing the grower knows how much fertiliser a plant needs. The amount of fertiliser per kilogram of product can be reduced with 25% in an open system. In a closed system it is even possible to re-circulate the fertiliser that is not taken up by the plant. This can be up to 78% without any reduction in neither yield nor product quality.

15 - 40%

List of definitions

Fertiliser

A fertiliser is any substance, such as manure or synthetic fertilisers, added to the root environment to increase plant productivity.

Hydroponics

Hydroponics is a subset of hydroculture, the method of growing plants without soil, using mineral fertiliser in a water solvent. Stone wool (mineral wool) is the most widely used medium in hydroponics.

Grodan hydroponics cultivation

Crops cultivated hydroponically on Grodan mineral wool receive precisely the amounts of water and fertiliser that plants need for optimal growth with the minimal emission of water and fertiliser to the environment and minimal use of pesticides.

Non-Governmental Organization (NGO)

A Non-Governmental Organisation (NGO) is a not-for-profit organisation independent from states and international governmental organisations.

Organic cultivation

Organic food is produced by methods that comply with the standards of organic farming which beholds an integrated farming system that strives for sustainability, the enhancement of soil fertility and biological diversity whilst, with rare exceptions, prohibiting synthetic pesticides, antibiotics, synthetic fertilisers, genetically modified organisms, and growth hormones.

Note: The legislation with respect to organic horticulture is not the same in Europe and in the US. In particular, organic cultivation out of the soil (but not in stone wool) is allowed in the US at the moment, while this is forbidden in Europe where organic cultivation is only possible in the soil.
Precision Growing enables professional growers to better control important growing parameters and to ensure the optimal growing environment for root development in stone wool. Grodan is the number one of the world in growing media solutions for the professional horticulture industry and has the purpose to “empower Precision Growing for everyone”.

This sustainable growing method holds promising potential in countries with high population growth where demand for resource-efficient food production is already high and will continue to rise in the future.

Grodan hydroponics can be sited anywhere, including in urban areas that would otherwise be completely unsuitable for traditional soil-based production. Inner-city derelict land and even unused buildings such as old mills, factories and office blocks can now become unique growing areas for our food. The resulting reduction in food miles also has an additional sustainability impact on the food chain.

For consumers who want to grow food sustainably at home, Precision Growing offers them a successful, low maintenance and fun growing experience.

Sustainable growing – anywhere and for everyone
People, Planet and Profit

For all people, food safety is a vital factor for secure, modern living. Surveys show that the potential presence of pesticide residues in food is the number one concern of today’s critical consumers.

Pesticide residues in fresh foods are subject to strict regulations around the world and products are regularly checked. Modern hydroponic greenhouse growers prefer biological alternatives, using beneficial insects to control pests and using bumble bees to pollinate crops. Thereupon, growers use minimal quantities of crop protection chemicals, since these can damage the beneficial insects they have invested in.
Acting in a sustainable way means that we should leave a better world for our children and for the generations to come. Growing healthy, nutritious food in ways that utilise less of the world’s valuable natural resources is a significant contribution to this goal. For consumers, reassurance of healthy and safe food at an affordable price is on the top of their list. For growers, a secure financial basis for business is essential.

Today, the world faces many challenges such as an increasing demand for food and limited resources available to meet up to this demand. Precision Growing enables growers to achieve higher yields while at the same time using less water, fertilisers and agricultural land. The result is an increase in yield and a significant reduction in CO2 emission per kilogram crop. Not only is this the most sustainable way of growing, it is also the most profitable way of growing.

Planet

Acting in a sustainable way means caring about the overall impact of our products they have on the world. We are committed to enriching the life of everyone who comes into contact with our products.

Grodan products are perfectly placed to ensure sustainable and safe food production while at the same time directly addressing the issue of water pollution. Precision Growing is an enabler for closed systems as it allows the recirculation of water and fertiliser. Consequently, the emission of fertiliser to ground and surface water supplies is substantially lower compared to conventional soil systems. In the most modern growing systems it is even possible to reduce emission of fertiliser to zero.

Furthermore, Precision Growing plays a part in reducing the biggest single environmental impact of a large part of the world’s greenhouse production, which is CO2 emission resulting from burning fossil fuels for heating. When growing hydroponically, yields increase significantly thereby reducing the CO2 footprint of each kilogram of fresh food.

Besides helping to eliminate water pollution and reducing the CO2 footprint of greenhouses, ‘doing more with less’ also means using available land more efficiently. This is simply thanks to:

• a higher yield per m² which requires less land
• faster growth allowing more growing cycles per year
• cultivation can be done on land or even in buildings
The Grodan solution

Grodan enables Precision Growing with the combination of stone wool growing media, innovative growing tools and personal advice. It is this unique portfolio that is perfectly placed to ensure sustainable food production.

At each stage of growth the use of our products is supported by innovative tools which allow the propagator and grower to monitor and manage the root zone environment in the most optimal way possible.

In today’s environmentally conscious world, choosing for organically grown food seems to be a logical choice at first sight. If the choice for organic food is based on a reduced use of pesticides and a lower impact on the environment, then controlled growing on substrates - hydroponically, takes the argument even further. Vegetables grown hydroponically and organically are both equally nutritious. Scientific research shows that hydroponics is the most sustainable method of growing. This way of growing uses less water and enables a more efficient use of fertiliser. On top of that this way of growing saves the use of valuable agricultural land and has a lower CO2 emission per kilogram of product.

Controlled growing on substrates is as such a clear and logical choice. While the EU Ecolabel certificate on our products provides an extra reassurance that Grodan’s growing media live up to the highest possible standards of sustainability. Our solution enables a method of cultivation that meets the challenges we face today and tomorrow by doubling food production with half of the resources as today. We understand this need and we are dedicated to provide a precision growing, growing medium solution that allows growers to do much more with much less.

We don’t stop there. Our customers are also supported by in house professional horticultural experts who guide them every step of the way.

Innovative growing tools

Plug, block and slab

Personal advice
Stuart Lambie  
Sustainability Manager

Passion for what we do  
I really believe that the human race needs to change the way it uses the earth’s resources over the next 100 years. These will be big changes, ensuring the future of mankind. Grodan can play a part in that change, helping to bring fresh food to more people, in more parts of the world in new ways, some of which we probably can’t even imagine right now – that’s the future contribution we and Grodan can make.

Agnieszka Szymanska  
Business Director

Passion makes the difference  
Our people follow their passion every single day in the horticulture industry and I am proud to be part of that team. Together we make a difference with our expertise and innovations. These create value for our customers and I believe that we are able to improve lives of many people in different places in the world.

Tony Abbas  
Sales Representative

Vision on the world  
I’ve had the pleasure of growing into a position that is both professionally and personally fulfilling. The fact that the Grodan vision entails more than just selling products - that we look to play a part in solving issues of scarcity with our knowledge and technology makes me feel good about where I spend my days.
Part of the ROCKWOOL Group
The core of everything we do at the ROCKWOOL Group is: to release the natural power of stone to enrich modern living. The ROCKWOOL Group’s product portfolio is perfectly placed to tackle many of today’s biggest sustainability and development challenges. Embedding sustainability in our business is about the overall impact our products have on the world. Our growers apply the most sustainable methods of producing healthy, nutritious food by using fewer resources. At the end of the growing season our products can be recycled into fertile compost, reusable plastics, or clay alternatives for the brickmaking industry. We are dedicated to continuously improve our ‘End Of Life’ solutions.

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Head Office Grodan
Industrieweg 15
6045 JG Roermond
The Netherlands

info@grodan.com
www.grodan.com