

# Six in One Syngenta in Switzerland



Strong roots in Switzerland: Syngenta is a global company headquartered in Basel with five further sites across Switzerland.



## Contents

- 05 — Foreword
- 06 — Global challenges
- 08 — Toolbox of solutions
- 10 — Innovation with a purpose
- 11 — Research as a central pillar
- 12 — The long path to market maturity
- 16 — A long history and extensive experience
- 18 — More Swiss than people think
- 20 — Strong roots have many layers
- 21 — A socially responsible employer
- 22 — Wide range of openings for talent
- 26 — Our business in Switzerland
- 28 — Swiss contribution to sustainability
- 30 — Syngenta Foundation supports smallholders
- 32 — A brief explanation
- 34 — Our locations in Switzerland

NB:

For legibility, the plural forms “they, their” are used in the text to avoid referring to gender.

Photo sources:

[www.agrimage.ch](http://www.agrimage.ch), Historical Archive Syngenta AG,  
Corporate Archive Novartis AG, Sacha Bittel / Le Nouvelliste.  
All photos are protected by copyright.

# Globally active, rooted in Switzerland

Foreword by Roman Mazzotta,  
Syngenta Country President for Switzerland



China is interested not only in sustainable domestic agriculture but also in productive international agriculture and Syngenta is happy to help. Besides our headquarters in Basel, we have a strong base in research and manufacturing in Switzerland. These will not be affected.

Syngenta's global research network will continue to contribute to boosting the productivity of agriculture worldwide.

For us all, the longer growth continues, the more sustainable it will be, and Syngenta will pay even more attention to sustainability in future. Natural resources are not infinite, which makes it all the more important to get the most out of available resources while improving the protection of our environment.

Far too much agricultural land is being lost daily to erosion and improvident farming. Changing this is just one goal in our plan for responsible growth.

A handwritten signature in black ink, appearing to read 'Roman Mazzotta'.

**Roman Mazzotta**  
Syngenta Country President for Switzerland

The takeover by ChemChina paves the way toward a win-win for both corporations. Syngenta will continue to be a globally active agricultural corporation with strong roots in Switzerland and better access to the Chinese market. ChemChina can benefit from Syngenta's knowledge, modern technologies and extensive experience, and make a key contribution to sustainable food security in China.

The transaction between ChemChina and Syngenta was successfully completed in 2017. We are confident this will pay off for both sides. It happened at the right time. The global challenge of feeding a growing world population sustainably requires long-term business vision and capital for innovation. Both of these are pivotal in view of the global downturn in agriculture, increased need for research as a result of climate change, and continuing regulatory pressure. To meet the daunting challenges in this context, farmers and industry are dependent on decision-makers to consistently strike the right balance, given the indisputable need for helpful regulation.

“The quest for food security can be the common thread that links the different challenges we face and helps build a sustainable future.”

José Graziano da Silva,  
Director-General of the UN Food and  
Agriculture Organization (FAO)



# Global challenges

Almost 10 billion people will have to be fed by 2050. That's around 200,000 more per day — as many people as the canton of Basel-Stadt has inhabitants. Syngenta wants to grow responsibly and make a sustainable contribution to bringing greater food security to an increasingly populous world.

## Supporting farmers in their demanding task

To be able to feed the world population in 2050, agricultural production must be increased by 77% in developing countries and 24% in developed countries, according to the FAO. This is impossible without sustainably intensifying agriculture – but developing countries in particular suffer from a devastating lack of modern technologies in many places. Working in the fields without technology means gruelling physical labor for farmers. For many, this is too much. Every day, some 180,000 people leave their fields to head for the city.

Agriculture must be made appealing to such smallholders to make rural development possible and so feed those living in cities. With our technologies, we support smallholders in producing their food and ours. But this is not enough. We are determined to achieve the

necessary increase in agricultural productivity in sustainable ways. For us, sustainability means creating ecological, economic and social added value for the current and future generations. The plan for responsible growth — The Good Growth Plan — is our contribution. We stand or fall by our results, and the data from more than 4,000 farms in over 40 countries charts our progress.

The plan includes six ambitious goals to help us support sustainable agriculture and develop rural communities. New technologies and training in agronomy are intended to help smallholders feed their families and sell their produce. Syngenta aims to help 20 million smallholders boost their productivity by 2020. In 2017 we had reached 13.9 million.

The further benefits of our efforts to date also speak for themselves. By 2017, various projects in which we are involved had resulted in improved soil quality on 7.5 million hectares of farmland in 41 countries. In addition, connected landscapes providing habitats for wild plants and animals covering 5.6 million hectares were created in 37 countries. Together, the soil projects cover an area almost as big as Greece.

## Did you know?

**+50–100%**

Without the intensification of agriculture, arable farming today would use 50–100% more land than in 1960.

## The individual goals

- Making crops more efficient means enhancing the yield of the most important crops by a given percentage without using more arable land, water, fertilizer or pesticides.
- Conserving more arable land means increasing the fertility of arable land on the brink of degradation. One possible way to do this is to integrate more good, land-conserving agricultural practices into our commercial services.
- But biodiversity is declining fast as species habitats are lost, and climate change increases the risks. We are promoting and enabling action to reverse this trend including developing a new methodology for better assessment of agriculture's impact on biodiversity.
- We help smallholders to help themselves, enabling them to raise their productivity sharply.
- Another of our major concerns is training millions of agricultural workers in safety at work.
- We believe we have a responsibility to work toward fair working conditions and the highest ethical standards throughout our supply chain.

To achieve all these ambitious goals, we seek dialogue and cooperation with other companies, NGOs and governments.

See how The Good Growth Plan is being implemented and learn more about our projects at [www.goodgrowthplan.com](http://www.goodgrowthplan.com)



**“Humanity depends on farmers to increase their output substantially, quickly and sustainably. Sustainability is totally relevant to business, including ours. Long-term business success means that we need to incorporate social factors and soil health, climate change and biodiversity into our business. The Good Growth Plan is now firmly anchored in our corporate principles and is a direct and measurable contribution toward achieving the UN's sustainability goals.”**

Alexandra Brand,  
Chief Sustainability Officer

## Achieving sustainable added value



Make crops more efficient



Rescue more farmland



Help biodiversity flourish



Empower smallholders



Help people stay safe

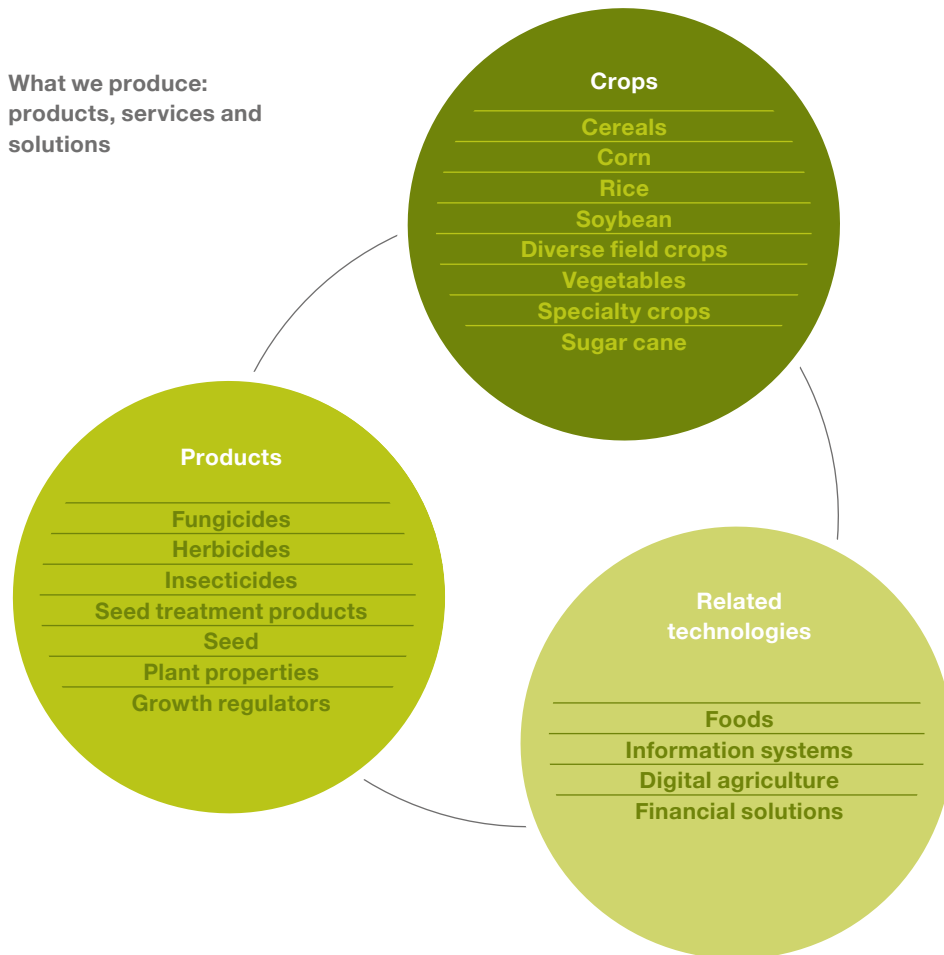


Look after every worker

# Toolbox of solutions

For farmers to be able to produce food and animal feed securely and efficiently, they need pesticides and seeds. However, they also need to know how to optimize their use and protect the environment and themselves. They need access to knowledge and information. This is why we offer a toolbox of solutions.

**What we produce: products, services and solutions**



## Broad product portfolio

As one of the leading agricultural corporations in the fields of pesticides and seeds, Syngenta develops numerous solutions to help farmers in their fields. Our product portfolio includes seeds for rice, cereals, corn, sugar cane, soybean and other crops. It also includes pesticides, i.e. herbicides, insecticides and fungicides.

Improved seeds and pesticides protect against plant diseases and prevent crop losses. However, farmers are not only given access to synthetic and biological pesticides, they are also trained by Syngenta in the sustainable use of these products. Programs for smallholders in particular ultimately lead to better farming practices and less pesticide use.

As nature is very adaptable, and in order to prevent resistance to individual products, farmers must have access to a range of different products.

## Secure and effective

Syngenta innovations enable smallholders and large-scale farmers to grow our food to a high quality and as safely as possible, without using more resources. Environmental protection is one of our key priorities. This is why we aim to understand at a local level how farmers treat the soil, irrigate their fields and use fertilizers. Together with farmers, we seek ways to further improve cultivation in harmony with the environment. Climate-smart agriculture can contribute significantly toward an improvement in greenhouse gas emissions efficiency.

## Toolbox of solutions

To achieve a balance of the best results for farmers and the environment, growers are offered a comprehensive toolbox of solutions. After all, produce not only has to be grown — crops have to be sold as well. This means that market knowledge and access to finance are also important to farmers. Syngenta also offers support in these areas in certain markets.

We are also steadily introducing improved information systems through digital platforms. Farmers can use such tools to calculate how much water, diesel or pesticide they need — and how they can reduce their consumption of resources even further. The data remains the property of the farmer.

The progress being made on sustainability is shown by the latest figures. In the four years since the launch of The Good Growth Plan, productivity among smallholders has increased by 21.6%. At the same time, pesticide field application efficiency has improved by 14.2%.

Sustainability and efficient farming are not mutually exclusive — on the contrary, we are convinced that sustainability is absolutely relevant to business and that global food security can only be provided with greater input efficiency.

## Did you know?

-1/3

Scientific surveys have shown that around one third of potential harvest yields worldwide are lost to pests and plant diseases.



# Innovation with a purpose

Whether storage life, appearance, taste or processing, Syngenta has an important role to play in the market in breeding many vegetable varieties. Consumers are constantly raising their expectations of quality in fresh and processed foods. We help farmers meet these increased demands.

Demand for food is growing worldwide, challenging the entire agricultural sector. At the same time, needs and requirements are changing: consumers and food processors are steadily raising their expectations of the quality of vegetables. We help farmers meet these demands.

To achieve optimal results our team are drawing on 150 years of experience with vegetable seeds to offer appropriate solutions with high-performance seed and modern crop protection products.

## Around 2,500 vegetable varieties

It is not easy to achieve the very different breeding goals such as long storage life, taste or resistance to pests. Syngenta has over

2,500 vegetable varieties on the market, divided between 26 vegetable species. Every year, between 150 and 200 new varieties are added.

Our breeders made a breakthrough recently with broccoli: one advantage of the new variety is that the vegetable — including the stalk — has a milder taste more appealing to the whole family. This broccoli has fewer leaves, meaning less effort and waste — a positive factor in processing.

A new variety of cauliflower recently presented in Holland comes in violet, orange or green. We have also invested in recent years in developing additional varieties, with new varieties of lettuce and spinach in 2017, among others.

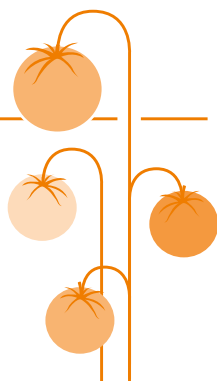
## One tomato in six worldwide

Vitamin-rich, fresh foods are the basis for a healthy and varied diet. Syngenta has a particularly high market share in tomatoes, where we are number two in tomato seeds and are the global leader in tomato specialties. Around one in every six tomatoes worldwide is a Syngenta variety. Particularly popular with children are the snack tomatoes in different colors.

## Did you know?

# 150 years

Syngenta has 150 years of experience in vegetable seeds and we are a global leader in tomato specialties.



# Research as a central pillar

We invest around CHF 1.3 billion a year in agricultural research and development. The pace of innovation in chemistry, genetics, breeding and technology continues to accelerate. Answers are needed to the great challenges of our times. Crop protection products can make a valuable contribution toward protecting our environment.



**“Our research starts with the farmers and ends with them. From early on in the innovation process we follow a holistic approach, because our products should not only work but also be registrable.”**

—  
Camilla Corsi,  
Global Head of Crop Protection Research

Technological innovations are essential if we are to effectively tackle food security and environmental protection. Crop protection products can make a valuable contribution to feeding a growing population. Without them, up to 40% of the harvest would be lost.

This is why we invest a lot of time and money in developing sustainable products. The path to market maturity is long and cluttered with obstacles. From discovering a problem — for example, a pest — to the use of a suitable substance takes some 10–12 years, with research and development costs of around CHF 250 million. Higher regulatory requirements are constantly increasing the cost of developing a new product. Of 100,000 molecules investigated, ultimately only one product will be registered. Almost one third of the cost of developing a new substance is spent on product safety.

Over 5,000 Syngenta scientists work at some 200 research and development sites worldwide. Specialists from the life sciences, chemistry, plant genetics and agronomics are constantly working on new techniques for achieving sustainable increases in yields and quality. The Swiss plant at Stein (AG) plays a central role as a competence center for new crop protection products.

# The long path to market maturity

## Our task

We help farmers protect their crops against pests, diseases and weeds, and guard against yield losses.



Toxicological testing (effects on environment, people, animals)

Year 1

Year 10-12

Number of active ingredients

>100,000

5,000

30

1 Product

Cost CHF  
250-300 million

## Our solution

We create new technologies and innovative crop protection solutions. These enable farmers to produce enough safe food for a growing population while taking care of the environment.



**“It is crucial for us that Switzerland should provide an environment which promotes commerce and research, with an internationally competitive regulatory framework. The open exchange and cooperation between politics, business and society are a basis for Switzerland to remain a habitat which can create prosperity for all.”**

Roman Mazzotta  
Syngenta Country President for Switzerland





# Long history and extensive experience



1758

J. R. Geigy founds a trading company in Basel for medicines, drink and tobacco



1844

Dr. Rudolf Maag AG is founded as a family company and manufactures dyes and fertilizer



1884

Gesellschaft für Chemische Industrie Basel (Ciba) is founded, followed two years later by the Kern & Sandoz plant

1904

The Basel chemical plant buys the "Fabrique électrochimique de Monthey" plant

1970

Ciba and Geigy merge to form Ciba-Geigy AG

1996

Sandoz and Ciba-Geigy AG merge to form Novartis



2000

**13.11.2000: Syngenta is born**

Novartis merges with the agricultural business of AstraZeneca in the world's first group concentrating solely on agricultural business



2001

The Syngenta Foundation for Sustainable Agriculture is created

2013

The Good Growth Plan is rolled out

2017

Syngenta is bought by ChemChina, gaining a new owner with a long-term perspective



**ChemChina**

ChemChina is the biggest chemical company in China and ranks 211 in the Fortune Global 500. Its most important business areas include life sciences, materials and environmental technologies. ChemChina has an extensive sustainability program which emphasizes its commitment to environmental protection, energy saving and pollution reduction. Its approach "New science, new future" has put the company on the best path to becoming a global leader in the chemicals industry.

# More Swiss than people might think

Syngenta is active worldwide and has strong roots in Switzerland. Besides our headquarters in Basel, we have five more Swiss locations.



**Basel**  
Global headquarters



In the 150 years of its industrial history, the Rosental district grew from a manufacturing site for chemical products into the head office of our global organization and European business. Basel is home to the Executive Committee and support and coordination organizational units serving multiple divisions.

**Dielsdorf**  
Local marketing and sales for Switzerland



Headquarters of the Swiss Crop Protection and Seeds businesses. All products offered on the Swiss market go from here directly to the customer. The Maag brand, from the House & Garden division, is also based here.

**Stein**  
Global research and development



The Stein campus is a globally significant competence center in crop protection research. Main activities include the discovery and biological characterization of new active ingredients against insects, fungi or nematodes, and investigating positive effects of chemical substances on plants under abiotic stress such as heat or water shortage.

**Münchwilen**  
Global product development



Specialists in analysis, process technology and formulation work here. The production processes for all Syngenta Crop Protection products worldwide are developed in Münchwilen. They ensure the product quality and stability expected by farmers for precise and efficient application.

**Kaisten**  
Global production



The Kaisten single-line plant produces an important crop protection component for the global market. This is the Syngenta plant with the highest degree of automation and highest per capita production output.

**Monthey**  
Global production



Syngenta's biggest production location worldwide. Production of almost all new active ingredients from research begins in Monthey before being extended to other locations.

# Strong roots have many layers

Only a fraction of our global sales comes from Switzerland, but we create a substantial part of our added value here. As investor and purchaser, in cooperation with partners in the most widely differing areas, and as a taxpayer, Syngenta is very important in Switzerland.



## Business-friendly environment

For a globally active corporation, a business-friendly environment is a fundamental prerequisite for thriving growth. The environment in Switzerland enables us to generate a large share of added value from here. While just 0.3% of sales are made in Switzerland, around 13% of our costs are incurred here. In the past decade we have invested some CHF 900 million in modernizing all our sites in Switzerland. We attach great importance to promoting talented young people, for example through our long-standing role as a partner of “Swiss Youth in Science”. With over 2,200 suppliers in Switzerland, Syngenta is also an important partner for many small and medium enterprises.

## Syngenta as purchaser

2,200

We buy goods and services from over 2,200 suppliers in Switzerland.

## Investment in Swiss plants

900<sup>m</sup>

In the past decade we have invested some CHF 900 million in expanding and modernizing our sites in Switzerland.

## Taxes and levies for the community

200<sup>m</sup>

Syngenta and our employees paid over CHF 200 million a year in taxes and levies in Switzerland in the past decade.

# A socially responsibly employer

Fair and good working conditions, equal pay and plenty of interesting jobs: — these are what characterize our working environment in Switzerland. Around 2,800 people from numerous nations work at the headquarters in Basel or one of the other five locations. We are a multi-cultural, multi-ethnic community based on diversity.



## Being a modern employer

Over 28,000 people in more than 90 countries earn their daily bread at Syngenta. 10% of them work in Switzerland. The range of salaried employees at the six locations is wide. At the headquarters in Basel alone, there are employees from some 70 nations. Whether you're an agricultural specialist, chemist or biologist, a financial, marketing or commercial specialist, a process engineer or technician, Syngenta has plenty of interesting and challenging positions.

We are a modern employer and offer excellent working conditions and pay. This includes family-friendly Human Resources and social policies. We also attach great value to equal pay. Salaries are based on gender-neutral job assessments.

Workplace design which promotes cooperation is another of the plus points at our sites. Working at Syngenta means working in a motivating environment, and knowing that teamwork and the personal contribution of every individual are greatly appreciated.

## Number of employees in Switzerland

2,800

Syngenta employs some 2,800 people in Switzerland.

# Vocational education and training

Syngenta attaches great importance to training and promoting young people, and offers some 35 new trainee positions annually in various occupations and professions to young, talented individuals throughout Switzerland. Vocational education and training gives young people a solid basis for entering the workforce, and smooths their way toward promising vocational, professional and personal advancement.



**“Syngenta is a good training establishment for a wide range of basic vocational education and training. The link with nature, the concentration on plants and the practical uses of the research fascinate me. That’s why I was happy to stay at Syngenta after finishing my training.”**

Sven Grgic, Laboratory Assistant, Federal VET Diploma Biology, majoring in Agrobiologie

**Vocational trainees, Switzerland**

# 100

In 2017 Syngenta employed 100 vocational trainees.

**Syngenta offers vocational education and training in the following roles:**

- Laboratory Assistant, Federal VET Diploma, Chemistry
- Laboratory Assistant, Federal VET Diploma, Biology, majoring in Agrobiologie
- Chemical and Pharmaceutical Technician, Federal VET Diploma, Chemical Technology
- Business Administration Assistant, Federal VET Diploma
- Precision Mechanic, Federal VET Diploma
- Logistics Specialist, Federal VET Diploma

Trainee hotline:  
T +41 61 323 03 23  
[info.lehrstelle@syngenta.com](mailto:info.lehrstelle@syngenta.com)

# Opportunities for career entrants

From university to Syngenta. We offer young university graduates, postgraduates and students an opportunity to gain their first practical experience. Depending on their educational background, we offer a wide range of graduate programs and internships.



**Graduate programs at a glance**

- Finance Management
- Grow in Syngenta — HR Program
- Grow in Syngenta — MBA Program
- Information Services
- Production and Supply

These programs give participants a comprehensive view of our business and teach them how even the most remote cogs in the organisational wheel interact. The details are determined individually, and assignments can be in Switzerland or abroad. A graduate program takes two to three years, after which numerous career openings are available.

**Career entrants**

# 65

Syngenta offers around 65 internships and jobs for career entrants every year.

Further information:  
[www.syngenta.com/careers/students-and-graduates](http://www.syngenta.com/careers/students-and-graduates)

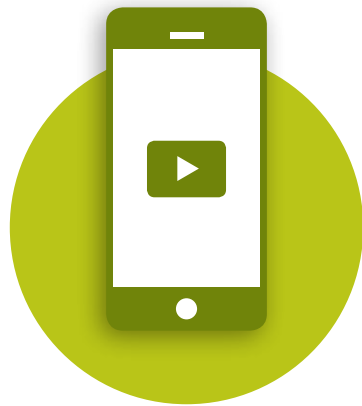


**“The digital age is opening up new prospects. Syngenta uses modern technology for the benefit of farmers, but personal advice is still important for us. A team of experienced field sales representatives support farmers with advice and practical assistance over the whole season.”**

—  
Stefan Odermatt,  
Commercial Unit Head, Syngenta Switzerland

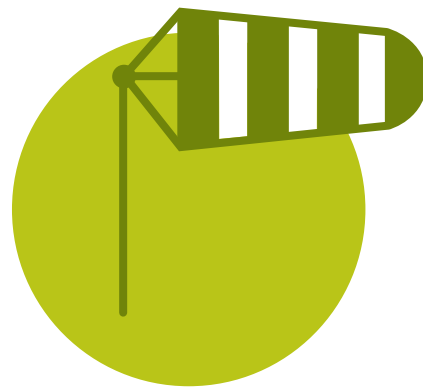
# Our business in Switzerland

The digital age is opening up new prospects. This means that Syngenta keeps farmers updated live from the field, for example with information about spreading pests. Experienced field sales representatives are also available to the farmers in person throughout the season.



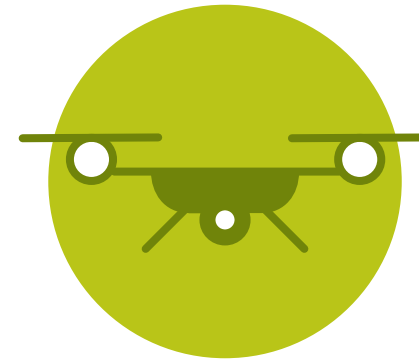
## Cultivation videos

Oilseed rape, barley or wheat, potatoes or sugar beet: there are numerous videos which can be downloaded from the internet in which a Syngenta field sales representative offers tips on how to treat a variety properly and protect it against pests. The short videos are regularly recorded in the field.



## Live Ticker

Anyone who wants to experience the development of field crops live is also well served. Viewers can see trial fields showing which crop protection measures are most promising. Syngenta weather stations in the field also supply important data, such as soil temperature or rainfall.



## Europe's first spraying drone

Europe's first spraying drone is an example of how digital technology can be used to apply crop protection products in a more effective and eco-friendly way in locations which are difficult to access. Syngenta is collaborating with the Agrofily start-up in Valais on their drone, to make accurate and precisely measured applications possible.



## Competent and personal

Personal advice is important for our customers. Farmers with questions, for example about a specific use of crop protection products, receive competent assistance. The field sales representatives team travels all over Switzerland. In addition there is a contact center where experts give information over the phone.

## Crop Protection products

100

Syngenta offers more than 100 CP products in Switzerland for field crops, fruit and vegetables.

## Seed varieties

160

Over 160 seed varieties are available in Switzerland for arable and vegetable cultivation.

## Field service employees

19

19 field sales representatives are available locally to give expert advice in Switzerland.

## Local seed propagation

100 ha

Syngenta propagates local hybrid barley for the Swiss market on over 100 hectares.

## Talking about sustainable crop protection

Syngenta is working with the "Agrar" group of science industries in the initiative [pflanzenschuetzer.ch](http://www.pflanzenschuetzer.ch) to demonstrate the importance of crop protection products for healthy plants, reliable harvest yields and safe food from Swiss production.

[www.pflanzenschuetzer.ch](http://www.pflanzenschuetzer.ch)

# Swiss contribution to sustainability

Our plan for responsible growth — The Good Growth Plan — is the guideline for Syngenta's global business strategy. One aspect of sustainability is efficient and safe use of resources. Another is the health and safety of employees and customers.



**“For me as head of global active ingredient production, safety and protecting health and the environment are key values. We have also committed voluntarily to continuous improvement through the ‘Responsible Care’ industry initiative.”**

Pascal Bugnon,  
Global Head of Active Ingredient Production

## **Safety-oriented corporate culture**

Health, safety and environmental protection: these are the three pillars on which Syngenta's sustainable corporate culture is based.

Syngenta has a number of production locations and chemical laboratories in Switzerland. We are committed to ongoing improvements in safety and environmental protection. Employees are required to be aware of health and safety at all times and be fully familiar with processes and safety requirements. This requires the right training, and Syngenta provides extensive training courses through e-learning, testing and validation of what has been learned.

Each operational process produces waste and waste water, and the way in which both of these are dealt with is strictly regulated. Our people repeatedly set themselves the goal of exceeding regulatory requirements and staying below upper limits. For this to be possible, we continually need to develop technology and people. For example, controlling exhaust gases requires a high level of technical knowledge and elaborate measuring technology.

We are constantly investing in the safety of our sites and the health of employees and customers. “Goal Zero”: we aim for no accidents at Syngenta sites. Something to be emphasized here is that there is no difference in safety standards from one country to another: the same rigorous standards apply globally.

Our key environmental goals include continuously reducing CO<sub>2</sub> emissions and energy consumption. In Kaisten, for example, waste heat from cooling is used to pre-heat in production, saving steam and energy. We continuously invest all along the value chain to increase safety and efficiency and to reduce environmental pollution.

## **Advice, information, training**

Out in the fields, strong and healthy ecosystems are essential for the productivity of tomorrow's agriculture. Poor cultivation methods increase soil erosion by wind and rain and make millions of hectares of land infertile. Advice, information and training for farmers is needed everywhere to halt this process and help promote sustainable farming.

And this is in everybody's interests. Population growth means that more food will be needed globally in the next 50 years than was produced in the last 10,000 — and all this with much more efficient use of resources.

The following website shows how these principles are being implemented by companies in the chemical and pharmaceutical industries in Switzerland.  
[www.responsible-care.ch](http://www.responsible-care.ch)

# Syngenta Foundation supports smallholders

The Syngenta Foundation for Sustainable Agriculture helps smallholders in developing countries improve their income. The independent foundation has been based in Basel for 35 years. Local teams work in Africa and Asia.

## Working for improvements

For Swiss growers, good training and infrastructure, regular advice, an open credit market, effective products and reliable customers are part of everyday life. Unfortunately, that's not the case for most farmers in developing countries. For them, a failed harvest can quickly endanger the livelihood of whole families.



Together with numerous partners, the Syngenta Foundation supports smallholders in many different ways. Currently, it primarily works in West Africa, Kenya, India, Bangladesh and Indonesia, with initiatives in other countries.

## Service, safety, seed

The focus here is on three approaches.

- Firstly, smallholders get better access to numerous services. These include advice, leased equipment and digital applications, for example.
- Secondly, smallholders can insure against weather damage. This reduces their risks, motivates them to invest, and increases their chances of getting credit.
- Thirdly, the Syngenta Foundation promotes access to healthy, locally adapted seed. Farmers benefit from this through better harvests, and jobs are created in small seed firms.

## At home in Switzerland

The Syngenta Foundation is headquartered in Basel. Many of its partners are also based in Switzerland. They include universities, businesses and public organizations. Since 2010, young Swiss nationals have been able to join the Syngenta Foundation as Social Service Volunteers.



Further information at  
[www.syngentafoundation.org](http://www.syngentafoundation.org)  
or on Twitter [@syngentafdn](https://twitter.com/syngentafdn)



# A brief explanation

## Abiotic/biotic stress

There are many stress factors which can have a negative influence on plant growth and health. Examples of these include insects, fungal pathogens, weeds, bacteria or viruses — so-called “biotic” factors. The “abiotic” stresses — stresses which do not involve any living entities — include aridity, heat, cold or soil salination. They are responsible for the losses in yields — some dramatic — in many regions of the Earth. Some crop protection products such as insecticides or fungicides have both a direct effect and a positive side-effect on plants’ tolerance of abiotic stresses.

## Digital agriculture

Digitization of agriculture describes the application of new information technologies to add value to farming. It is also sometimes described as “agriculture 4.0”, “precision agriculture” or “precision farming”, “smart farming” or “hi-tech agriculture”. Digital agriculture includes:

- technology-controlled devices (drones, automated field or milking robots, GPS-steered machinery etc)
- software for farm management
- collection, storage, networking and analysis of data.

The goal is the sustainable optimization of agricultural processes (increasing yields and minimizing consumption and waste). Challenges for the future are acceptance of new technologies, user-friendly platforms, broadband expansion in rural areas, digitization of the entire value chain and the legal situation with regard to data security, protection and ownership.

## Food security

Food security means that everyone has physical and economic access at all times to enough safe food, and that dietary preferences and needs for a healthy and active life can be met.

This definition covers:

- availability
- access
- use
- stability

The first two relate to enough food being grown and distributed, and people having financial resources to buy it. Availability and access are influenced by agronomic potential, investment in infrastructure and breeding. Global drivers such as population growth and global trade, as well as general economic and technological development, also play an important role.

The third element, use, includes quality, safety and dealing with food waste and losses, as well as the quantity of agricultural products used as fuels or in plastics.

The last element refers to the stability of the food system. From a short-term perspective, this involves the political, institutional and economic climate promoting investment and innovation. The state of natural resources and the influence of various environmental factors, such as climate change, soil quality or plant diseases, also play a role. They all affect the long-term potential and resilience of the food system.

## Pesticide

The word comes from the English “pest” and the Latin for “killer”. Pesticide is any substance or compound of chemical or biological ingredients intended to prevent, destroy or combat pests or regulate plant growth.

(FAO and WHO definition)

## Crop protection products

Crop protection products are all products used to protect crops against plant pests. Depending on their purpose, they are primarily divided into herbicides to combat competition from weeds, insecticides to combat pests, and fungicides to combat diseases and fungi. Every type of agriculture relies on crop protection products, whether from conventional, biological or integrated production.

## Plant breeding

The goal of plant breeding is genetic change of the plant population to improve its biological and economic properties. It is based on plant selection, seed treatment, modern breeding methods or crossing, and subsequent selection of daughter plants for the next cycle of breeding or subsequent propagation as seed for a new plant variety.

Humans have been breeding plants since they first settled in order to obtain the best crop species for cultivation. Achieving the very different breeding goals simultaneously requires a great deal of expertise. Besides appearance, taste and transportability, properties such as consistent starch content in cereals or minimum waste from peelings in the case of vegetables play an important role. Farmers want resistance to pests, drought tolerance for dry periods or simultaneous ripening for vine tomatoes, for example. For their part, consumers want lasting freshness and shelf life with or without a refrigerator and positive plant properties that help them stay youthful and healthy.

Due to the high costs of development and regulation, plant breeding is expensive and time-consuming, taking around 10 years. Innovations in plant breeding will make it possible to bring varieties that are better adapted to various stress factors to market more quickly. Greater precision makes it possible to target breeding more than could be done by conventional methods involving crossing multiple genes.

## Resource efficiency in agriculture

Resource-efficient agricultural production is aimed at optimizing yields while minimizing the use of labor, energy, land, water, fertilizer and pesticides.

## Seed treatment

Seed treatment is a technology which coats seeds with biological or chemical active ingredients. Plants are protected against insects and transmissible diseases which can have devastating consequences, particularly in the early stages of growth. The environment benefits because seed treatment uses much smaller quantities of crop protection products than treating crops.

## Weeds

Unwanted vegetation alongside crops. Weeds compete with crops and stunt their growth. There are also toxic weeds which — if not suppressed — are harvested with the crop and can be a hazard to health.

Sources include: pflanzenforschung.de, blw.admin.ch

# Our locations in Switzerland

The Stein research center is one of our three main research and development sites around the world. Visitors are invited to take a tour.

Besides the discovery and biological characterization of new active ingredients to deal with insects, fungi or nematodes, Stein supports crop protection products which are already on the market. Teams at the center also study the positive effect of chemicals on plants under abiotic stress, such as heat or water shortage, and the robustness of new seed lines when in contact with fungal pathogens and insects.

With chemistry, biology, seed and seed treatment brought together at one site, Stein is a globally important, interactive campus for crop protection research.

Visit us there:

[www.syngenta.ch/unternehmen/standorte/stein](http://www.syngenta.ch/unternehmen/standorte/stein)

---

## Basel

Syngenta Crop Protection AG  
Schwarzwaldallee 215  
P.O. Box  
4002 Basel  
T +41 61 323 11 11

---

## Münchwilen

Syngenta Crop Protection AG  
Breitenloh 5  
4333 Münchwilen  
T +41 62 868 51 11

---

## Monthey

Syngenta Crop Protection  
Monthey SA  
Route de l'Île-au-Bois  
CP 400  
1870 Monthey  
T +41 24 475 21 11

---

## Stein

Syngenta Crop Protection AG  
Research & Development Stein  
Schaffhauserstrasse 101  
4332 Stein AG  
T +41 62 866 00 00

---

## Kaisten

Syngenta Crop Protection AG  
Münchwilen  
Werk Kaisten  
Hardmattstrasse 434  
5082 Kaisten  
T +41 62 869 52 11

---

## Dielsdorf

Syngenta Agro AG  
Rudolf-Maag-Strasse 5  
P.O. Box 233  
8157 Dielsdorf ZH  
T +41 44 855 88 77

---

## Contact addresses

**Syngenta Crop Protection AG**  
Swiss Communications  
P.O. Box, 4002 Basel  
[publicpolicy.switzerland@syngenta.com](mailto:publicpolicy.switzerland@syngenta.com)

**HR Operations Switzerland**  
T +41 61 761 41 51  
[www.syngentajobs.com](http://www.syngentajobs.com)



# Bringing plant potential to life

Syngenta is a Swiss agricultural company with a global focus. We carry out research and development and manufacturing in Switzerland and have our headquarters here, too. We commit our first-class expertise and the most productive research and development in the industry to achieve an increase in sustainable agricultural productivity.

Over 28,000 employees support both large-scale farms and smallholders in over 90 countries in their task of producing sustainably high-quality food, while making optimal use of agricultural land and other natural resources.

© Syngenta AG, Basel, Switzerland  
The word marks SYNGENTA and BRINGING PLANT POTENTIAL TO LIFE are registered trademarks of Syngenta.  
All rights reserved.

Editorial completion: June 2018  
Concept and design: Hej GmbH, Zurich

[www.syngenta.ch](http://www.syngenta.ch)

