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English Coaching

Basic English manual

syngenta



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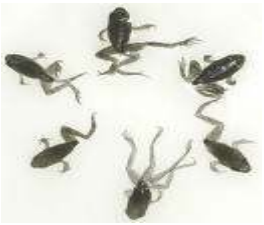
This training material was developed by Dr. Johan van Rooyen from HHBC in close corporation with Mr. Frank Zhou of Syngenta.

Dr. Johan van Rooyen

Contents



To the student

Welcome to HHBC Training

Below are some class rules designed to let you get the most benefit from the training.

- **Participate 100 %**: The more you participate and get involved in the class, the more you will gain from this class. Attend classes and be on time. **Only talk in English!!**
- **Ask Questions:** never, never be afraid to ask questions. Trainers want to be stopped and asked questions. So, do not be afraid to ask questions.
- **Make mistakes:** When you do not make mistakes, how can we help you? Trainers never want to hear "I am sorry" for making a mistake. We are not computers, we are allowed to make mistakes.
- **Help each other:** Your trainer is only one person, so learn from each other. Help each other and create a great team spirit and an effective learning environment.
- **Enjoy:** The best way to learn new information is when you enjoy the learning experience.

HHBC have two key objectives for this class. They are as follows:

- To ensure you enjoy the learning experience
- To develop your ability so you can function more effectively in your workplace.

Create 3 of your own objectives for attending this Course.

Make sure your objectives are (**SMART**).

Specific
Measurable
Ambitious
Realistic
Time-limited

About the course

Basic aim

1 To provide a course for Syngenta students. The course contain enough material for 6 month's work, depending on the time allotted to it. The students will receive most of the training in the classroom and will be required to do some extra work in his own time.

2 To introduce the student gradually to the world of Syngenta, and to make the student familiar with a wide range of different topics within the Company.

3 To continue the student's training in the five skills: understanding, speaking, reading, writing and thinking. The course is set out to do two things: to provide material which will be suitable for oral practice and which can also be used to train the student systematically to write English at a basic level.

4 To provide a student with a book that will enable him to use the language.

Assumed Knowledge

⇒ ***Listening and Speaking:***

- The ability to understand some English dealing with everyday subjects in the workplace.
- The ability to ask questions
- The ability to use a number of elementary sentences patterns.
- The ability to give a short talk on each subject

⇒ ***Reading:***

- The ability to read in English aloud.

⇒ ***Writing:***

- The ability to write simple sentences

How to use the course

Allocation of time

Ideally, two classroom lessons of approximately 50 minutes each should be spent on each text.

The stages of a lesson.

*1 **Listening and Comprehension (40 minutes)***

- Introduce Topic
- Understand the situation. Students are asked to look at the picture and see if the can understand what is going on in the text.
- Listening. The students will be given a question to answer after listening to the short story.
- Intensive reading. After each sentence the students will ask if the understand the meaning of the sentence
- Read aloud. A few students will have the privilege to read the text aloud.

*2 **Vocabulary (30 minutes)***

- The indicated vocabulary will be explained to the students and they will have to create sentences with the indicated vocabulary.

*3 **Exercises (30 minutes)***

- Teachers ask questions
- Students ask questions
- Complete the indicated exercises

*4 **Dialogues (40 minutes)***

- Students can prepare and play the roles in the dialogue. Trainer must only correct after the dialogue is completed.

*5 **Topics for discussion (40 minutes)***

- Students are encourage to express their own ideas regarding the topics, no matter how many mistakes they make.

*6 **Homework assignment***

- After each lesson a homework assignment will be given for the next class.

Lesson 1
Introduction

Introduction to Syngenta

Syngenta is a world-leading agribusiness. They are committed to sustainable agriculture farming with future generations in mind. They contribute to that in many ways, for example by raising productivity through innovative research and new technology.

Syngenta provides two main types of products: seeds and crop protection. These help growers worldwide raise the quantity and quality of their crops.

In Syngenta you can always read their motto “Bring plant potential to life”

Dialogue

Frank:	Hello, Jion. Welcome to Syngenta.
Jion:	**Hello, it is an honor to visit Syngenta**
Frank:	Thank you, Jion. Let me introduce my company to you.
Jion:	**I can not wait. Lets begin the journey.**
Frank:	Syngenta was created in 2000, and our experience goes back many years. Bringing plant potential to life is our company purpose. We achieve it by working to our values: Innovation, Intensity, Health and Performance.
Jion:	**Please explain innovation to me .**
Frank:	Innovation means always seeking a better way: turning breakthrough ideas in science and business into new solutions. We do that by fostering our people‘s creativity and working closely with customers.
Jion:	**That is very impressive. It seems that Syngenta is a big organization.**
Frank:	Syngenta is a leader in crop protection, and ranks third in the high-value commercial seeds market. Sales in 2007 were approximately $9.2 billion. The company employs over 21,000 people in more than 90 countries.

Vocabulary

Crop protection		Human Resource		Stakeholder	
Professional Product		Herbicide		Purpose	
Supply Chain		Fungicide		Values	
Continuous Improvement		Insecticide		Strategy	
Performance Management		Pesticide		Agriculture	

Exercise

1. Complete the dialogue

A) Hello, welcome to our English class.

B) _____

A) Nice to meet you. What is your name?

B) _____

A) That is very impressive, so you like your job. Tell me more.

B) _____

2. Circle the correct response to the questions asked

A) Can I have your security card please?

i) Yes, here they is.

ii) Yes, here they are

iii) Yes, here is it.

iv) Yes, here it is.

B) Do you have a vision statement?

i) Yes, they have

ii) Yes, we have

ii) Yes, there are

iii) No we don't

B) Is Syngenta a big organization?

i) Yes, they am

ii) Yes, we are

ii) Yes, there are

iii) No we aren't

3. Expressions

A) Enjoy your journey

B) Have a nice day

C) Bringing plant potential to life is our company purpose.

4. Make sentences with the following words:

Herbicide

_____

Pesticide

_____

Fungicide

_____

Insecticide

_____

Stakeholder

_____

Agriculture

_____

Strategy

_____

Values

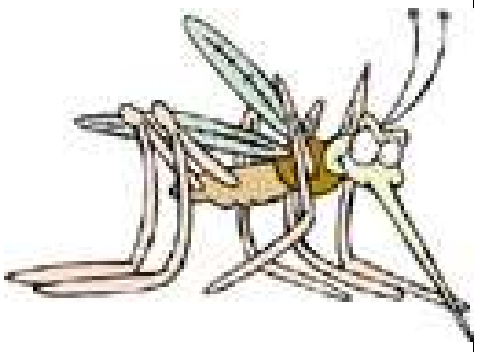
_____

Purpose

_____

Reading

World Malaria Day 25 April 2008



Malaria infects more than 500 million people each year and kills more than 1 million - many of whom are children under the age of five who live in sub-Saharan Africa.

Numerous serious infectious diseases are insect-borne. Syngenta products help control these insects, thus providing protection against diseases such as malaria.

We work closely with partners including ministries of health, non-governmental humanitarian aid organizations and academic institutions to ensure the availability of products capable of combating mosquitoes in the regions affected; we also support training initiatives to make sure the products are deployed effectively. Cooperation includes evaluating the effectiveness and safety of products to be deployed, exercising precautionary measures in the event of emergencies, monitoring resistance and developing new ways of combating vector insects.

Syngenta's portfolio of preventive products includes sprays, mosquito nets and treatments. Market-leading technology is used when it comes to protecting vulnerable populations against insect vectors such as mosquitoes.

1. How many people does malaria infect each year?

   _____

2. Where does most of these people live?

   _____

3. Whose products help in controlling the insects?

   _____

4. What insect causes malaria?

   _____

Discussion

1. Where did you hear about Syngenta the first time?
2. What makes working for Syngenta special for you?
3. What can you tell us about Syngenta?

Lesson 2
Safety

Introduction to Safety

Syngenta takes safety very seriously. Our people are required to wear protective clothing when they are in the workplace. One of Syngenta's top priorities is to protect the environment and the health and safety of the people who work for us and use our products. The effective management of health and safety and protection of the environment are integral to our business success and determines our license to operate.

Dialogue

Frank:	Jion, let us go to the production area.
Jion:	**Great, let me walk in front**
Frank:	wait, wait..not so fast. We have to dress in safety clothes and get our safety protection gear first.
Jion:	**Ok, why do we need safety and protection.**
Frank:	Syngenta believes that safety is an integral part of our business. Our people matter to us, and we want to protect them from possible harm. Syngenta makes health, safety and protection our license to operate.
Jion:	**That is good, I feel well protected being with you. What are we wearing?**
Frank:	We will dress in a safety overall, safety hat, shoe protection and safety glasses
Jion:	**Thank you, Frank. I just wonder if I will fit in the overall. You see my stomach is so big.**
Frank:	Hahaha, Jion you are so funny. I wish I was as healthy as you are. Here we are, please dress in the overall, and wear the safety hat at all times. The safety glasses will also protect your eyes.
Jion:	**What is that?**
Frank:	These are respirators and gloves and today we do not need to wear a respirator and gloves. They are used in special areas. You look good in the safety gear. Lets go.
Jion:	**Thanks, yes, lets go.**

Vocabulary

Occupational Disease		Toxic		Helmet	
First aid		Filter		Gas detector	
Risk analysis		Goggle		Alarm	
Mask		Safety glasses		Incident	
Respirator		Safety shoes		Extinguisher	

Exercise

1. Answer the following questions.

1. What did you learn today?

_____

2. When do you wear safety glasses?

_____

3. What first aid equipment do you have at your house?

_____

4. Why do you think it was necessary for Jion to wear a helmet?

_____

5. How your day yesterday?

_____

2. Give the past simple of the following words:

1. Run _____
2. Walk _____
3. Dress _____
4. Put _____
5. Wear _____
6. Look _____
7. Speak _____
8. Listen _____
9. Give _____
10. Take _____

3. Expressions

- First class
- I am in seventh heaven
- Rollout the red carpet
- License to operate

4. Make sentences with the following words:

Occupational diseases

_____

Risk analysis

_____

Incident

_____

Hazard substance

_____

Warning specification

_____

Industrial hygiene

_____

Waste management

_____

Root cause

_____

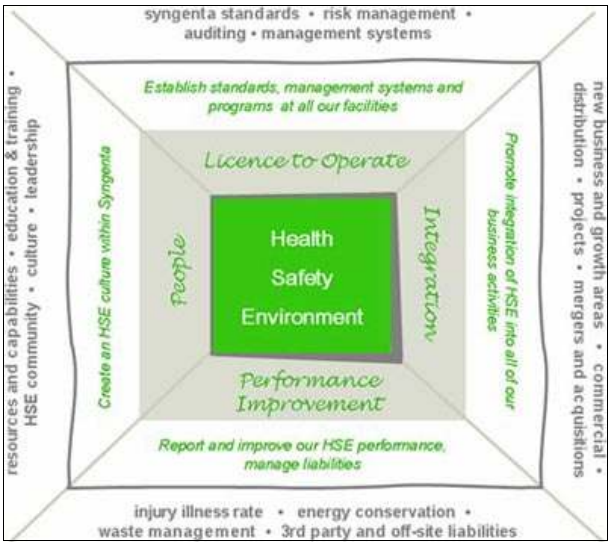
Hydrant

_____

Reading

Health Safety Environment (HSE) Strategic Agenda

Our HSE strategic agenda sets out our approach to improve HSE performance to 2010. It builds on the progress made since our initial HSE roadmap in 2000. During this time we have developed core HSE systems. These include: HSE policy and commitments, HSE management systems, auditing and assurance processes, and a reporting mechanism to communicate performance.
Progress against local targets will be measured as part of the annual review of Syngenta HSE performance.



The diagram shows the dynamic and interrelated nature of our HSE challenges and opportunities. We have identified key goals and actions, grouped in four categories.

People

- Establish HSE as a core value at Syngenta
- Have a recognized community of HSE staff who share best practices across the company and actively liaise with line managers
- Ensure line managers are personally responsible for HSE

Ensure that our HSE policy, commitments and standards are fully understood across the organization, backed up by adequate staff education and training resources.

License to operate

- Identify health and safety risks and put in place systems to manage them
- Ensure Syngenta HSE standards are fully implemented across all our facilities and form the backbone of site HSE activities
- Refine and evaluate the HSE program so it continues to support the needs of the business

Implement local operational audit programs at all sites to improve HSE.

Performance

- Understand on-site and off-site environmental liabilities at all sites
- Achieve a recordable injury and illness rate (IIR) of 0.5 by 2008
- Identify all waste streams and put in place appropriate waste reduction and waste management plans

Take an active role in helping sites reduce their energy use, by building awareness across Syngenta and encouraging the development and sharing of best practice.

Integration

- Integrate HSE considerations into product design and development processes
- Ensure HSE standards are integrated into distribution and sales divisions
- Apply the standards to all new businesses.

1. Name the four (4) categories that identify goals and actions within HSE.

2. What doe HSE stand for?

3. What five (5) core HSE systems were developed?

Discussion

1. Why is safety very important in a company?
2. How do you think safety can improve at your workplace?
3. What is your feeling regarding Occupational diseases?

Lesson 3
Wettable Products

Introduction to WP

There is a distinct difference between a wettable powder and a soluble powder. A soluble powder dissolves when mixed with water, in the same manner as dissolving sugar in water. Wettable powders do not dissolve. When mixed with water a wettable powder forms a suspension. That is, the particles that make up the material float throughout the solution. The main advantages of wettable powder insecticides: initial knock-down of targeted pests, extended residual effects and (in most cases) odorless.

Dialogue

Frank:	Well Jion, let me introduce our WP area first.
Jion:	**OK. Frank what does WP stand for?**
Frank:	WP is short for Wettable Products. These products when mixed with water it does not dissolve, it forms a suspension.
Jion:	**Ok, why is it better than a soluble product?**
Frank:	When a wettable product is sprayed on a surface, 100% of the product stays on the surface, and therefore it is more effective in getting rid of insects like spiders and centipedes.
Jion:	**That is very interesting, I can see that Syngenta's scientist develop the best products to carry out the tasks at hand.**
Frank:	Yes, Syngenta's scientist work very hard to perfect the right product for the right application.
Jion:	**Hahaha, I am glad I am not an insect who must deal with a Syngenta product.**
Frank:	Yes, that is true. Insects like caterpillars and aphids can significantly reduce crop yields and quality through their feeding. Insecticides help minimize this damage by controlling insect pests.
Jion:	**What is that?**
Frank:	That is our Bossard machine.

Vocabulary

Wettability		Supervisor		Hazard Substance	
Recipe		Shift leader		Warning Specification	
Injector		Manager		Drum	
Gloves		Operator		Equipment	
Packaging		Assistant		Conveyor	

Exercise

1. Find the following words and circle them:

A. Equipment
B. Glove
C. Operator
D. Assistant
E. Mask
F. Filter
G. Safety
H. Toxic
I. Drum
J. Conveyor

E	A	S	S	I	S	T	A	N	T
Q	A	C	F	I	L	T	E	R	Q
U	R	H	D	X	V	B	O	E	K
I	O	Z	Q	M	A	S	K	T	G
P	Y	T	I	R	S	A	N	A	F
M	E	M	N	B	F	F	R	R	D
E	V	G	L	O	V	E	J	E	R
N	N	L	K	M	C	T	N	P	U
T	O	X	I	C	Z	Y	P	O	M
Y	C	C	X	D	E	R	T	Y	P

2. Write the Chinese word for the following:

Fire		Waste		Sifter	
Shower		JIT		Container	
Drain		Pallet		Powder	
Filter		Ink jet		File	
Seal		Vessel		Floor	
Fan		Breaker		Carton	

3. Expressions

- We have to start from scratch
- Word of mouth
- We have to go
- I was up all night

4. Create sentences with the following words:

Equipment

_____

Glove

_____

Operator

_____

Manager

_____

Operator

_____

Conveyor

_____

Toxic

_____

Drain

_____

Warning Specification

_____

Assistant

_____

Reading

Pakistan diversifies

As planting of genetically modified cotton increased in Pakistan, Syngenta Pakistan recognized the need to diversify from cotton insecticides. The team successfully shifted its focus towards herbicides and fungicides for wheat, rice, fruit and vegetables. The sales force was motivated to concentrate on these new growth markets by clear communication of strategy and quarterly reporting on how milestones were being met. The level of engagement and feeling of ownership for the multi-crop strategy enabled the team to achieve long-term sustainability for the new business model. Results are impressive, with sales showing strong double-digit growth.

1. **From what product did Syngenta diversify?**

   _____

2. **To products did they diversify too?**

   _____

   _____

3. **What were the results?**

   _____

Discussion

1. **Explain why you think WP are important.**

Lesson 4
The Bossard

Introduction to the Bossard production line

A **production line** is a set of sequential operations established in a factory whereby materials are put through a refining process to produce an end-product that is suitable for onward consumption; or components are assembled to make a finished article.

Dialogue

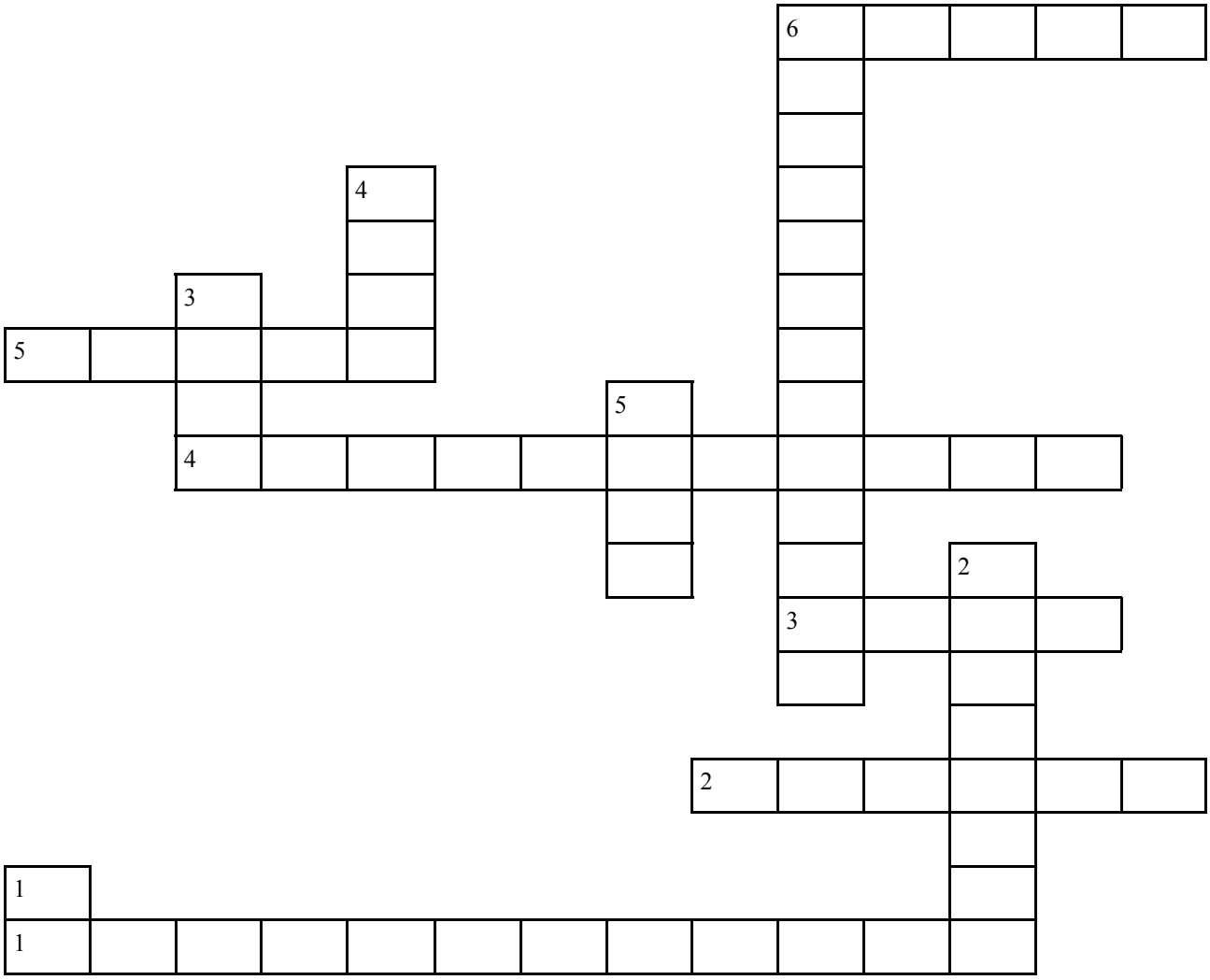
Frank:	That is our Bossard machine
Jion:	**Oh I see, This is a filling machine?**
Frank:	Yes, this production line was set up for small packets of wettable products .
Jion:	**Who is that man?**
Frank:	Well, he is one of our operators. This production line consist of an operator, shift leader, and packer.
Jion:	**They must be very busy. Are they not very tired after a days work?**
Frank:	Yes, they are. However, they are assisted by the conveyor who transports the packets from the Bossard where they are filled with the product, sealed and weighted. Then the conveyor transport the products and create a barcode that is printed on the ink jet printer.
Jion:	**What does the packer do?**
Frank:	As soon as the product is weighted and the weight is good, she will fill the carton with the correct amount of packets and put then on the pallet.
Jion:	**What will happen then?**
Frank:	The products will wait on the pallet for the Quality Inspector to do their check to make sure that everything is according to the quality standard of Syngenta.
Jion:	**What happens when the weight of the packet is wrong, or the packet is damaged?**
Frank:	The Quality Inspector will stick a green label on the good production, and will indicate the non qualifying product with a red label. The non qualifying production will be returned for rework. Quality control are very strict, and our products are to the USA standards.
Jion:	**Thank you Frank. You are so informative.**
Frank:	Come, let me introduce you to the supervisor of WP

Vocabulary

Folding box		Packing line		Quality	
Shipping box		Packing machine		Quantity	
Label		Sealing machine		Batch. No	
Pallet		Plant		Nett weight	
Finished goods		Productivity		Carton	

Exercise

1. Complete the cross word.



Across	Down
1. be productive	1. Wettable products
2. Packing material	2. Many products
3. Container	3. Make sure
4. For client	4. Stamp
5. Quality Control	5. Dangerous
6. Opposite of roof	6. After production

Productivity. Carton. Drum. Shipping box. Check. floor

WP. Quantity. Test. Mark. Fire. Finished goods

2. Draw a map and write down the directions how to get to the Bossard machine.

3. Tell the trainer how to get to your home. Use words like:

- Turn left
- Turn right
- Go along
- Cross the …….

4. Expressions

- Bon appétit
- Let's hurry
- Start from the beginning
- Around the corner
- Across the street

5. Create sentences with the following words:

Folding box

_____

Quality

_____

Batch No.

_____

Nett weight

_____

Gross weight

_____

Plant

_____

Pallet

_____

Sequential

_____

Establish

_____

Refine

_____

Suitable

_____

Consumption

_____

Reading

Products

Syngenta products contribute to rural community welfare and sustainable agriculture by improving crop yields while minimizing environmental impacts. We are committed to high standards of product stewardship for the protection of the environment and the health and safety of our employees, farm workers and consumers.

Increasing pressure on land and water resources mean productivity gains are essential if the world is to satisfy escalating demand for food and agricultural produce. Demand is growing for animal rather than plant protein, leading to a greater proportion of grain being diverted to animal feed.

Our products help growers improve the productivity of existing farmland. Without crop protection products, it is estimated that 40 percent of arable food crops would be lost to pests and diseases each year. The growing market for biofuels, rising commodity prices and crop failure due to extreme weather events make our products even more essential to meet demand for food, feed, fiber and fuel.

Developments in agricultural technology bring benefits to rural communities. According to the latest World Development Report, investments in agricultural research and development are accelerating growth and reducing poverty in developing countries.

Our goal is to create innovative chemical and seed solutions to help growers improve production of food and feed. Syngenta products include:

- Crop protection products that protect yields by controlling insects, weeds and disease
- Seed products that improve yields by enhancing the composition of plants or optimizing the production of useful parts of the crop
- Seed care technology that protects vulnerable seeds and seedlings from pests and diseases
- Products used for garden and home care, and to improve quality of life by controlling disease-carrying pests.

Discussion

1. How do you think the world will look like in 20 years from now?

Lesson 5
The Butler

Introduction to the Butler production line

The operator is most likely to be dangerously exposed to pesticides. You may breathe particles from highly concentrated wettable powders or from granules or dusts. You may contaminate your hands and then unintentionally carry the pesticide to your mouth when smoking, eating, or just rubbing your lips or eyes. Always wear adequate protective clothing and equipment. Always put them on before handling or opening a pesticide container. Remember that a respirator or an appropriate form of eye protection should be worn if there is any chance of pesticide inhalation or eye exposure. Never eat, drink, or smoke while handling pesticides.

Dialogue

Frank:	This is our Butler production line
Jion:	**Frank, why is that operator wearing a mask?**
Frank:	Do not worry Jion, he is behind the window. He is wearing protective clothing and equipment to ensure his safety.
Jion:	**What is he doing?**
Frank:	As I said, this is our Butler production line. This machine is handling our packages with wettable product between 100grams and 1 kilogram.
Jion:	**Frank what happens if the weight is not correct?**
Frank:	Good question Jion. When our scale detect that a package weight is incorrect, it will "kick" the package into this yellow bin. That is to ensure that our products are of a high standard.
Jion:	**O, yes, I just saw a package that was "kicked". What will happen to this package?**
Frank:	This package will be sent back for rework. When this happens often, we will investigate the root cause and correct the mistake.
Jion:	**That shows me that Syngenta takes its work very serious.**
Frank:	That is true. We are very proud of our name and our work.

Vocabulary

Physical		Cost		Lift	
Chemical		Powder		Activity board	
Big bag		Filter		Pump	
Potential		Sifter		Empty drum	
Delivery		Container		Specifications	

Exercise

1. Unscramble the following words and make a sentence with each word.

F E T L I R	
L I A T N E T O P	
S I C A L Y P H	
F I L T	
F I C A N O I T I C E P S	

2. Expressions

- Right this way, please
- Please follow me.
- Give me a call
- I can make an exception.

3. Create sentences with the following words:

Chemical

_____

Big

_____

Delivery

_____

Cost

_____

Powder

_____

Sifter

_____

Container

_____

Activity board

_____

Pump

_____

Drum

_____

Reading

Stewardship

Product stewardship is the term used to describe the responsible and ethical management of a product, from invention through to ultimate use. Our commitment to high standards of stewardship extends throughout the product lifecycle – from research and development to manufacture, use and disposal. The safety of everyone who handles our products is a priority for Syngenta.

We are committed to comply with the UN Food and Agriculture Organization's Code of Conduct on the Distribution and Use of Pesticides. Syngenta is leading a joint initiative with the industry association Crop life to develop an online training module. The training will raise awareness of the Code among employees in the crop protection industry and help improve compliance.

1. What does stewardship mean?

_____

_____

2. Explain product lifecycle.

_____

_____

3. What kind of training module did Syngenta developed?

_____

Discussion

1. What is your understanding of stewardship?
2. How do you contribute to training and development in Syngenta?
3. How can you improve your job in Syngenta?

Lesson 6
5 S

Introduction 5 S

5S, abbreviated from the Japanese words **Seiri, Seiton, Seison, Seiketsu, and Shitsuke**, are simple but effective methods to organize the workplace.

The 5S, translated into English are: **housekeeping, workplace organization, cleanup, keep cleanliness, and discipline**. They can be defined as follows:

- **Housekeeping.** Separate needed items from unneeded items. Keep only what is immediately necessary item on the shop floor.
- **Workplace Organization.** Organize the workplace so that needed items can be easily and quickly accessed. A place for everything and everything in its place.
- **Cleanup.** Sweeping, washing, and cleaning everything around working area immediately.
- **Cleanliness.** Keep everything clean for a constant state of readiness.
- **Discipline.** Everyone understands, obeys, and practices the rules when in the plant.

Implementing 5S methods in the plant would help the company to reduce **waste** hidden in the plant, improve the levels of **quality** and safety, reduce the **lead time** and **cost**, and thus, increase company's **profit**.

Five English S:

- **S**ales - Increase sales (market share).
- **S**avings - Save costs.
- **S**afety - Provide a safety working environment.
- **S**tandardization - Standardize the operating procedure.
- **S**atisfaction - Employees and customers satisfaction.

Dialogue

Frank:	Jion, I wanted to ask you, do you think our workplace is very clean?
Jion:	**Frank, I am glad you ask me. I wanted to compliment you because the production area is very clean. I can not see anything out of place. I thought you cleaned last night because I am visiting you.**
Frank:	Hahaha, yes, Jion you are an important guess, and in Syngenta we always do good housekeeping. We base our housekeeping on the 5 S method.
Jion:	**What is 5 S ?**
Frank:	5 S is an effective way to organize the workplace. It originated in Japan and stand for 1. Seiri (sort) 2. Seiton (set) 3. Seiso (shine) 4. Seiketsu (standardization) 5. Shitsuke (sustain)
Jion:	**I see, I will remember the English words, the Japanese words are to difficult. Are these principles very useful?**
Frank:	O, yes. On their own each one can be very useful, and as a set of five, they really support our production. It makes it very easy to manage an operation like ours. Look at this board. Here we mark all the issues at hand, and when a problem occurs, we can deal with it effectively
Jion:	**Frank, now I can understand why you work for Syngenta. They are very well organized.**
Frank:	Yes, I cannot agree with you more.

Vocabulary

Verify		Corrective action		Application	
Responsibility		Preventive action		Critical	
Stoppage		Guidance		Brush	
Record		Recommendation		Sample	
Tool box		Scenario		Involve	

Exercise

1. Complete the following dialogue.

A) Do you know what 5 S stands for?

B) _____

A) On the board you use some red and yellow cards. What is the meaning of the colors?

B) _____

A) Thank you for telling me.

B) _____

A) What will you be doing at lunch time. Going to the canteen?

B) _____

A) Nice talking to you.

B) _____

2. Give the Chinese meaning for the following words:

Sort	
Set	
Shine	
Standardization	
Sustain	

Reading

The 5S's - an English "translation"

1. Sort: Clearing the work area
2. Set in Order: Designating locations
3. Shine: Cleanliness & workplace appearance
4. Standardize: Everyone doing things the same way
5. Sustain: Ingraining the 5S's into the culture

Sort: Clearing the work area

Any work area should only have the items needed to perform the work in the area. All other items should be cleared (sorted out) from the work area.

Set in Order: Designating locations

Everything in the work area should have a place and everything should be in its place.

Shine: Cleanliness & workplace appearance

Not only should the work area be clear, it should also be clean.

Cleanliness involves housekeeping efforts, improving the appearance of the work area, and even more importantly, preventive housekeeping - keeping the work area from getting dirty, rather than just cleaning it up after it becomes dirty.

Standardize: Everyone doing things the same way

Everyone in the work area and in the organization must be involved in the 5S effort, creating best practices and then getting everyone to "copy" those best practices the same way, everywhere, and every time. Work area layouts and storage techniques should be standardized wherever possible.

Sustain: Ingraining the 5S's into the culture

It's tough to keep a 5S effort, or any improvement effort for that matter, going. The 5S's involve a culture change. And to achieve a culture change, it has to be ingrained into the organization - by everyone at all levels in the organization.

Discussion

1. What is your understanding of 5 S ?
2. Do you think 5 S is very practical in any workplace?

Lesson 7
Daily Report

Introduction to Daily Report

Completing the Daily Report is an essential part of an operators tasks. It gives the basic production information that is required to run production smoothly. Information includes the batch number, raw material information and workforce information.

Dialogue

Frank:	Jion, let me introduce you to our Daily Report.
Jion:	**OK. What is a daily report used for?**
Frank:	Our daily report introduce the production basic information. It is very necessary to know what production is running and for which customer.
Jion:	**What information is necessary to be on the report ?**
Frank:	You see Jion, all the information on our report will assist in identifying the product and procedures to follow for a specific batch. It indicates the Raw material, Product name, workforce information such as feeding and filling positions and quality checks
Jion:	**I see, what will happen if there is down-time?**
Frank:	Jion, the operator must indicate it immediately on the daily report and he will also indicate what the root cause of the problem was. One of the problems that may occur is that the sealing temperature is not correct.
Jion:	**What will happen if the sealing temperature is incorrect?**
Frank:	The operator must adjust the temperature immediately. The unqualified material will return for reworking.
Jion:	**That is interesting. Where are we going now?**
Frank;	Lets go and let me introduce you to the EC production area.

Vocabulary

Write down		Measure		Instruction	
Report		Adjust		Red tag	
Approve		Instrument		Blue tag	
Inspection		Process		Suggestion	
Check		Leakage		Breakdown	

Exercise

1. Write the Chinese for the following words:

Complete		**Customer**	
Essential		**Unqualified**	
Operator		**Temperature**	
Basic		**Rework**	
Batch		**Material**	

2. Complete the following report by filling in the necessary information.

Name		**Date**	
Surname		**Date of Birth**	
Nationality		**Contact Number**	
Address			
Qualification		**Occupation**	
Marital status		**Next of kin**	
Job description			

3. Expressions

- Sorry I can't tell you that right now.
- Can I get back to you on that?
- I will explain a little later
- Let me explain

4. Create sentences with the following combination of words:

Write down / Report

_____

Approve / inspection

_____

Check / measure

_____

Adjust / instrument

_____

Process / leakage

_____

Instruction / red tag

_____

Suggestion / Breakdown

_____

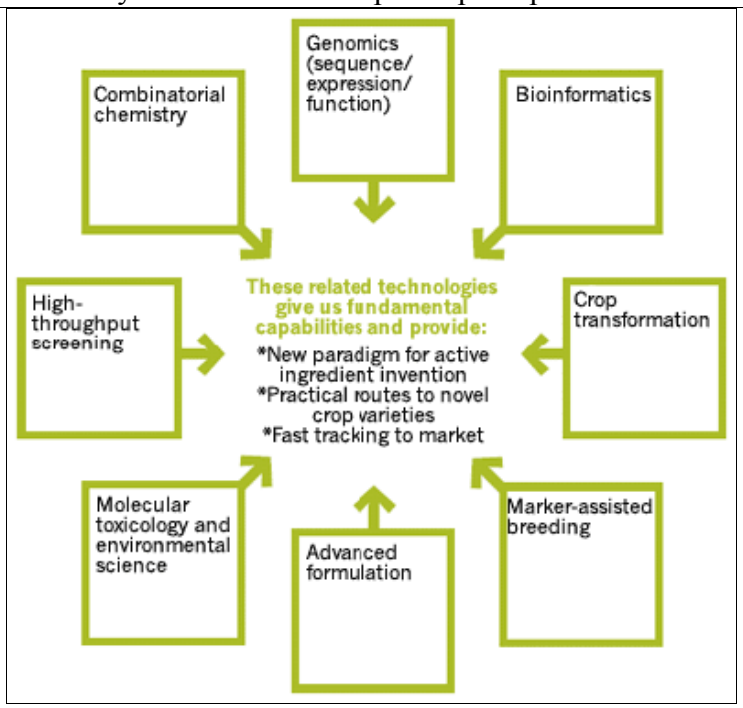
Daily Reports are necessary

Reading

Technology

There are two key elements to our research: firstly to develop new products and technologies, and secondly to support existing products, extending their uses, improving their performance and monitoring their long-term environmental profile. We work to develop safe and effective solutions that can form part of sustainable farming systems.

To achieve this, at Syngenta we are focusing on eight core technology platforms. These are related technologies that we manage together to provide a strong foundation for all our work. They increase our capacity to discover and invent new active ingredients and provide practical routes to novel crop varieties. They also enable us to speed up the path to market of our new products.



1. What is the two key elements in Syngenta's research?

   _____

2. Name Syngenta's 8 core technology platforms.

   _____

   _____

   _____

   _____

Discussion

1. **Discuss your part in the future of Syngenta.**

Lesson 8

Emulsifiable Consentrate (EC) Production

Introduction to EC

An emulsifiable concentrate is simply a liquid concentrate that is added to water to create your pesticide solution. In most cases, EC is the designation for an emulsifiable insecticide (or fungicide) concentrate product. Emulsifiable concentrates usually dry clear and give 28 to 31 days residual. These products are also cheaper to use for jobs requiring a large volume of pesticide spray.

Dialogue

Frank:	Jion, this is our EC production lines
Jion:	**Frank, this is very impressive. It looks more sophisticated than the WP area.**
Frank:	Our EC production consist of two different kinds of production, namely the sachet lines and the bottling lines
Jion:	**What is this operator doing ?**
Frank:	She makes sure that each shipping box has all the necessary booklets to accompany the sachets.
Jion:	**Frank look! What is happening at that machine?**
Frank:	Ahh, don't worry Jion. There is a leakage. Lets move closer and let me explain.
Jion:	**Is it safe to go closer?**
Frank:	Yes. You are wearing safety protection. Look here, the machine is fully automatic. The empty Sachets are on this roll, then it moves along where it is opened, then filled, sealed cut and transported to the conveyor.
Jion:	**I see. Yes here was the problem, the cut-setting was incorrect. That caused the leakage.**
Frank;	Jion, you are clever. Let us stand to one side to give space for maintenance to check the setting.

Vocabulary

Pipe		Filling machine		Level	
Valve		Capper machine		Transmitter	
Nut		Sealing machine		Maintenance	
Cap		Stainless steel		Pincher	
Rust		Lubrication		Screw	

Exercise

1. Correct the following sentence structure.

A. the machine I maintained yesterday.

_____

B. the pincher filled I carefully.

_____

C. the shift at five o'clock ended.

_____

D. work I like very much.

_____

E. We at home stay on Sundays.

_____

F. immediately left the manager.

_____

G. the product spoilt the operator.

_____

H. she quickly cuts the booklet.

_____

I. quietly the machine operates.

_____

J. the supervisor a letter from management last week received.

_____

2. Expressions

- Lets go Dutch
- I will give my right arm for …….
- Point blank
- Green with envy

3. Create sentences with the following word combinations:

Filling machine / maintenance

_____

Sealing machine / pipe

_____

Level / transmitter

_____

Rust / screw

_____

Cap / pincher

_____

Nut / lubrication

_____

Stainless steel / valve

_____

Reading

Searching for new chemical-based products

There is an abundance of exciting new technologies available to assist us in developing new active ingredients for crop protection products. Access to these new technologies is particularly important, as the chemicals being developed today must be able to offer significant improvements over existing products in order to be successful. The development of these new technologies has resulted in the chemistry and biology invention laboratories of today being almost unrecognizable from those in existence just a decade ago.

One very important development has been the use of genomics to supplement traditional methods of identifying biochemical targets for our research activities.

All the characteristics of a plant, insect or fungus are described in its genome. The relatively new scientific discipline of genomics provides detailed understanding of the genetic material of a target organism, allowing our researchers to identify specific genes responsible for specific proteins with specific functions in an organism.

If the function of a particular protein is essential to the survival of a pest, weed or disease, this represents a potential target for a new crop protection product.

Discussion

1. **Working in EC can be very exciting. What will you do when there is a leakage and maintenance is not available?**
2. **What can you tell about the high and low viscosity filling machines?**
3. **What quality inspections are necessary in the EC production area?**

Lesson 9
Water determination

Introduction to water determination

Many Pharmacopeia articles either are hydrates or contain water in adsorbed form. As a result, the determination of the water content is important in demonstrating compliance with the Pharmacopeia standards.

Dialogue

Frank:	Jion, let me introduce you to Peter. Peter work with water determination.
Jion:	**Hi Peter. Nice to meet you. Why is water determination very important?**
Peter:	Jion, to comply with International standards, we have to indicate what is the water content in our products.
Jion:	**That sounds very difficult. Do you use a specific method?**
Peter:	Yes we are. We use the Karl Fischer method to determine water content in a substance.
Jion:	**Peter, do you use special apparatus for the determination?**
Peter:	Generally, the apparatus consists of an automatic burette, a back titration flask, a stirrer, and an equipment for amperometric titration at constant voltage or potentiometric titration at constant current. Because water determination TS is extremely hygroscopic, the titration apparatus should be protected from atmospheric moisture.
Jion:	**That sounds like Greek to me. Do you only have one testing way?**
Peter:	No, Jion. We have three different methods of testing. The first method is called Titrimetric, method two is called Toluene distillation and the third method is called Gravimetric.
Jion:	**Peter you are great. I cannot even pronounce the names. I am sure Syngenta is proud to have you on their team.**
Peter:	Thank you, Jion. I enjoy my work very much and Syngenta support me in many ways.

Vocabulary

Hydrates		Pharmacopeia		Apparatus	
Adsorb		Titration		Drying	
Compliance		Solution		Weighing	
Articles		Reagent		Saturate	
Monograph		Methanol		Scrub	

Exercise

1. Fill in the blanks.

Many articles either are or contain in adsorbed form. As a result, the of the water content is important in demonstrating compliance with the Pharmacopeia . Generally one of the methods given below is called for in the individual monograph, depending upon the nature of the article. In rare cases, a choice is allowed between methods. When the article contains water of hydration, the Method I , the Method II , or the Method III is employed, as directed in the individual monograph, and the requirement is given under the heading Water. Generally, the apparatus consists of an , a back , a , and an equipment for amperometric titration at constant voltage or potentiometric titration at current.

2. Useful expressions

- Age before beauty
- Its all Greek to me
- Safe pair of hands
- In a pickle
- In a nutshell

3. Create sentences with the following combination of words:

Scrub / flask

_____

Saturate / chemicals

_____

Drying / solution

_____

Weighing / compliance

_____

Articles / reagent

_____

Apparatus / monograph

_____

4. Describe the following picture in 5 sentences.

Reading

High-throughput screening of a potential new chemical product

High-throughput automated screening can assist tremendously in testing a large number of different chemicals to detect potential research leads. Traditionally, companies were able to test approximately 10,000 chemical compounds per year to determine whether they had a potential effect on a target organism. These trials required relatively large amounts of a chemical (hundreds of milligrams) and were conducted in glasshouses or controlled-environment rooms.

Today‘s miniaturized screens allow us to run millions of tests a year, both on the whole organism, and on the isolated biochemical target sites. The secret of this massive increase in throughput is the adoption of a small micro-titer plate. These plates contain many individual wells or compartments, which allow many options to be tested at once. A major advantage is that these new screens only require a few micrograms of a test compound.

This new technology allows the screening of several hundred thousand compounds per year, with automation being employed throughout the process, from sample retrieval through to assessment of effect.

1. What can assist in testing a large number of different chemicals?

   _____

2. How many chemical compounds could be tested traditionally?

   _____

3. What can assist in screening thousands of compounds each year?

   _____

Discussion

1. **Determining water in a product is necessary to comply with international standards. What is your feeling about other products that we buy for daily use?**
2. **Is it necessary for products to comply to standards. Why can we not trust other businesses, like many years ago?**

Lesson 10
pH value

Introduction to pH value

A method of expressing differences in the acidity or alkalinity of a solution. A figure of 7 is regarded as neutral, figures below this indicate the decree of acidity and above alkalinity.

Dialogue

Peter:	Jion, do you want a cup of water to drink?
Jion:	**Yes, thank you Peter. Water, natures milk for a thirsty body.**
Peter:	Hahaha, you sound like a poet. Did you know that water has a specific pH value? A normal pH meter will indicate values of between 0—14. values below 7 are seen as a degree of acidity and above 7 as alkalinity. Where 7 is seen as neutral
Jion:	**I learned the basics in school, and why does a company like Syngenta use this measure?**
Peter:	As you know Jion, we produce some products in liquid form. It is very important to indicate what the pH value of our products are.
Jion:	**I see. So the pH values are the same everywhere in the world?**
Peter:	Yes. To be able to create a practical operational system that is comparable in laboratories worldwide, it is imperative that a standardized system is used.
Jion:	**When the pH value is not to standard, do you have some solutions to control the pH value?**
Peter:	Yes, we do have. We call the buffer solutions. We use chemicals such as potassium tetra oxalate, potassium biphthalate, sodium tetra borate and calcium hydroxide.
Jion:	**Peter, your knowledge leave me without words. In chemical terms, what does the pH value indicates?**
Peter:	Thank you, Jion. It is a good question. The pH value indicates the hydrogen-ion activity in a solution.

Vocabulary

Purpose		Instrument		pH meter	
Define		Sensing		Replenish	
Standardized		Calibration		Neutral	
Indicator		Laboratory		Acid	
Electrode		Variation		Alkaline	

Exercise

1. Re-write the dialogue between Peter and Jion using your own words.

2. Useful expressions

- Tie up the loose ends
- Mumbo-jumbo
- Neck and neck
- Tongue in cheek
- Tower of strength

3. Create sentence with the following combination words:

Purpose / life/ goals

_____

Define / aim / solution

_____

Standardized / indicator / electrode

_____

Calibration / sensing / instrument

_____

Laboratory / scientist / variation

_____

Replenish / neutral

_____

pH meter / acid / alkaline

_____

Reading

Research Targets

To ensure that our products meet the needs of our customers, and are aligned with our commercial targets, our research activities are business driven.

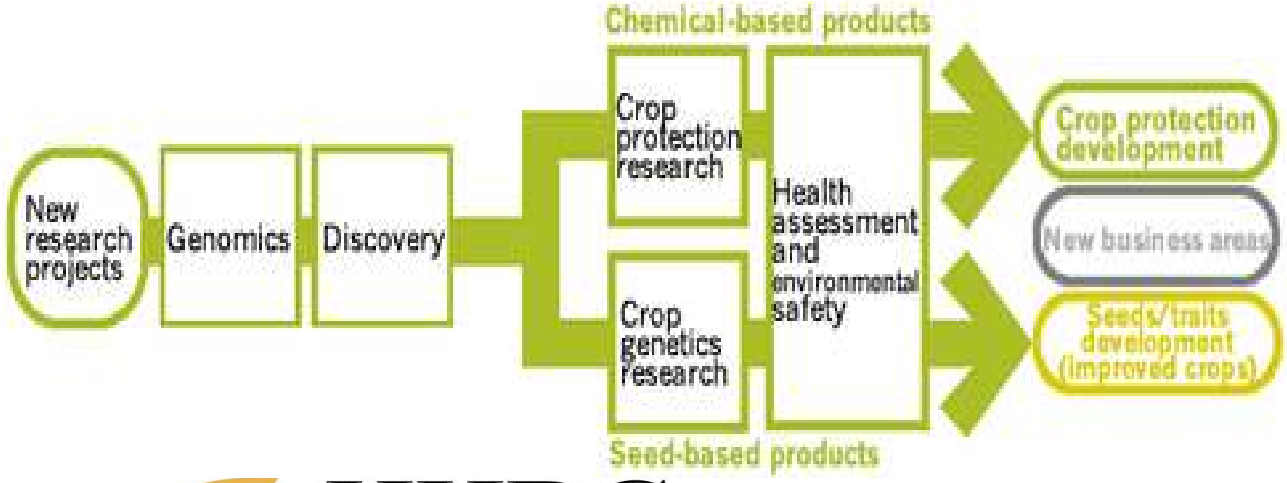
Throughout the research process, our scientists liaise closely with their commercial colleagues in other parts of the business worldwide, as well as with our customers. In addition, close co-operation with production and formulation staff is essential to ensure that the final product is suitable to be used in a wide range of different farming systems throughout the world.

Each research team includes representatives from key parts of the business to ensure that every project is aligned to our business needs

1. True or false
   A) Syngenta's research are business driven. _____
   B) Syngenta puts its products first. Customers last. _____
   C) Syngenta does not have own scientists. _____
   D) Commercial colleagues mean people in other laboratories. _____
   E) Close corporation in Syngenta is not a requirement. _____
   F) Research teams consist of people from key parts in business. _____

Discussion

1. Discuss what you understand regarding the following diagram



Lesson 11
Quality Control

Introduction to quality control

Quality control is a process employed to ensure a certain level of quality in a product or service. It may include whatever actions a business deems necessary to provide for the control and verification of certain characteristics of a product or service. The basic goal of quality control is to ensure that the products, services, or processes provided meet specific requirements and are dependable, satisfactory, and fiscally sound.

Dialogue

Frank:	Jion, did you enjoy your talk with Peter. He is very intelligent?
Jion:	**Yes, thank you Frank. I must confess, I did not understand everything he said.**
Frank:	Hahaha, yes, sometimes I am glad I do not have to remember all the Chemical names. They sound Greek to me
Jion:	**For sure. I am very impressed with the quality of Syngenta. They seems very serious about their work.**
Frank:	Yes they are very serious. Syngenta is an international company and our plant ships products to many customers. Quality is very important.
Jion:	**Do the quality Inspectors check every batch?**
Frank:	Yes. They take a sample of each batch and check the quality to make sure it is to standard.
Jion:	**How do you know that they checked a batch and what happens when they find a quality issue?**
Frank:	Ai Jion, you ask many questions. First when they checked a batch and the batch has no problems, they will indicate it with a green label, when there is a problem, they will indicate it with a red label. Secondly, the quality issue must be addressed immediately and the shipment cannot go out.
Jion:	**Sorry for asking so many questions, I must sound boring.**
Frank:	No problem, asking questions are one of the most important jobs of a quality inspector, I think you will be good at it.

Vocabulary

Funnel		Discipline		Resistance	
Flask		Monitor		Reactance	
Online testing		Procedure		Ratio	
Sample		Transfer materials		Capacity	
Contamination		ISO tank		Inspection	

Exercise

1. Supply the missing word (to, at, for, with) in the following sentences.

A. I don't agree _____ you.

B. She preferred _____ wait _____ the supervisor.

C. How do you account _____ this batch?

D. Please do not mention it _____ my colleagues.

E. Poor Yvonne! She has so much to cope _____.

F. Do you mean you exchanged that lovely computer _____ this?

G. I'm surprised _____ you!

H. She's accustomed _____ living by herself.

I. I knocked _____ the door.

J. He was quite unprepared _____ the news.

K. Don't blame me _____ the accident.

L. It is rude _____ stare at her.

M. I'm disgusted _____ the operator's behavior.

N. Do you object _____ my smoking?

O. You must reply _____ his email.

P. He has some important business to attend _____.

Q. You must comply _____ the set standards

R. I was shocked _____ the products indifference.

S. Whom does this book belong _____.

2. Useful expressions

- What is the real issue?
- Our primary concern is …….
- Any ideas?
- I recommend that ……..
- I suggest that ……..

3. Make sentences with the following combination of words

Funnel / at / inspection

_____

Flask / finish / online testing

_____

Sample / disgusting / discipline

_____

Contamination / with

_____

Quality / monitor / for

_____

Procedure / rules / Syngenta

_____

ISO tank / capacity

_____

Resistance / reactance / product

_____

Ratio / capacity

_____

Reading

The cost of quality."

It’s a term that's widely used – and widely misunderstood.

The "cost of quality" isn't the price of creating a quality product or service. It's the cost of NOT creating a quality product or service.

Every time work is redone, the cost of quality increases. Obvious examples include:

- The reworking of a manufactured item.
- The retesting of an assembly.
- The rebuilding of a tool.
- The correction of a bank statement.
- The reworking of a service, such as the reprocessing of a loan operation or the replacement of a food order in a restaurant.

In short, any cost that would not have been expended if quality were

Discussion

1. **Quality is very important in a company. The world turns around quality and price. What is your viewpoint? Is there too much issues regarding quality?**
2. **The Japanese are well-known for their quality issues. Not so much the product but the cosmetics. What is your viewpoint?**

Lesson 12

HIGH-PRESSURE LIQUID CHROMATOGRAPHY (HPLC)

Introduction to HPLC

High-performance liquid chromatography (or **High pressure liquid chromatography**, **HPLC**) is a form of column chromatography used frequently in biochemistry and analytical chemistry to separate, identify, and quantify compounds. HPLC utilizes a column that holds chromatographic packing material (stationary phase), a pump that moves the mobile phase (s) through the column, and a detector that shows the retention times of the molecules. Retention time varies depending on the interactions between the stationary phase, the molecules being analyzed, and the solvent (s) used.

Dialogue

Frank:	Jion, this is our Quality laboratory.
Jion:	**This is very impressive! The people are very busy. Frank, what is this?**
Frank:	Let me introduce you to Carl, he is a Chemist.
Jion:	**Hi Carl. I am very interested in what you are doing. What apparatus is this?**
Carl:	Hi Jion. Well this is a Chromatograph. We use it for HPLC. It means High-performance liquid chromatography and we analyze the quality of our product with it.
Jion:	**It seems very sophisticated, can you tell me more?**
Carl:	Yes. The sample to be analyzed is introduced in small volume to the stream of mobile phase and is retarded by specific chemical or physical interactions with the stationary phase as it traverses the length of the column. The amount of retardation depends on the nature of the analyte, stationary phase and mobile phase composition. The time at which a specific analyte elutes (comes out of the end of the column) is called the retention time and is considered a reasonably unique identifying characteristic of a given analyte. The use of pressure increases the linear velocity (speed) giving the components less time to diffuse within the column, leading to improved resolution in the resulting chromatogram.
Jion:	**Thank you Carl. It is very interesting.**
Carl:	No problem, it is a very important part of Syngenta quality inspection.

Vocabulary

Liquid		Absorption		Injector	
High pressure		Organic com-pound		Computer	
Separation		Capacity		Recorder	
Technique		Chromatograph		Densely	
Partition		Reservoir		Retardation	

Exercise

1. Give the correct form of the verbs in parentheses:

A. By the end of next week they _____ (finish) work on the new production line.

B. If you _____ (break) the flask, you would have to pay for it.

C. He would enjoy the visit to Syngenta if he _____ (be) present.

D. If you _____ (can) help me, I would be grateful.

E. This is what I _____ (mean). _____(you understand) me?

F. Years ago, he _____ (smoke) but he _____ (not smoke) anymore.

G. I _____ (not see) him since 2007.

H. She _____ (drop) her file as she _____ (cross) the road.

2. Supply *so, such or such a* in the following sentences:

A. He ran _____ quickly that I could not catch him.

B. Whoever told you _____ thing?

C. You should not make _____ mistake.

D. You should not say _____ things.

E. It was _____ good book that it was bought by Syngenta.

F. He is _____ lazy worker, he never does anything.

G. It was _____ extraordinary visit I wanted to go again.

3. Useful expressions

- A bit too much
- A penny for your thoughts
- Ace up your sleeve
- An old flame
- All roads lead to Rome

4. Create sentences with the following words:

Liquid / while

_____

Separation / regret

_____

Technique / rush / shortly

_____

Absorption / afterwards

_____

Organic compound

_____

Capacity / high pressure

_____

Chromatograph / station

_____

Reservoir / towards

_____

Injector / computer / printer

_____

Densely / Tubing

_____

Reading

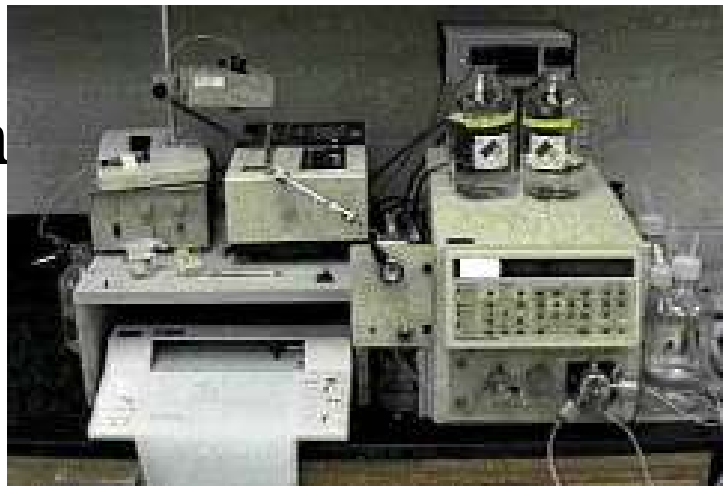
Applications for HPLC

Preparative HPLC refers to the process of isolation and purification of compounds. Important is the degree of solute purity and the throughput, which is the amount of compound produced per unit time. This differs from **analytical HPLC**, where the focus is to obtain information about the sample compound. The information that can be obtained includes identification, quantification, and resolution of a compound.

Chemical Separations can be accomplished using HPLC by utilizing the fact that certain compounds have different migration rates given a particular column and mobile phase. Thus, the chromatographer can separate compounds (more on chiral separations) from each other using HPLC; the extent or degree of separation is mostly determined by the choice of stationary phase and mobile phase.

Purification refers to the process of separating or extracting the target compound from other (possibly structurally related) compounds or contaminants. Each compound should have a characteristic peak under certain chromatographic conditions. Depending on what needs to be separated and how closely related the samples are, the chromatographer may choose the conditions, such as the proper mobile phase, to allow adequate separation in order to collect or extract the desired compound as it elutes from the stationary phase. The migration of the compounds and contaminants through the column need to differ enough so that the pure desired compound can be collected or extracted without incurring any other undesired compound.

--HPLC of Proteins and Polynucleotides



Discussion

1. **What do you understand of the above article?**

Lesson 13
GAS CHROMATOGRAPHY

Introduction to gas chromatography

Gas chromatography (GC), is a type of chromatography in which the mobile phase is a carrier gas, usually an inert gas such as helium or an un-reactive gas such as nitrogen, and the stationary phase is a microscopic layer of liquid or polymer on an inert solid support, inside glass or metal tubing, called a column. The instrument used to perform gas chromatographic separations is called a *gas chromatograph* (also: *aerograph*, *gas separator*).

Dialogue

Yvonne:	Hi Jion, I am Yvonne. I am responsible for GC
Jion:	**Hi Yvonne. What is GC ?**
Yvonne:	GC stand for gas chromatography. It is different from HPLC because we use gas and not a liquid as a carrier.
Jion:	**That is interesting. How do you carry out GC at Syngenta?**
Yvonne:	In a GC analysis, a known volume of gaseous or liquid analyte is injected into the "entrance" (head) of the column, usually using a microsyringe. As the carrier gas sweeps the analyte molecules through the column, this motion is inhibited by the adsorption of the analyte molecules either onto the column walls or onto packing materials in the column. The rate at which the molecules progress along the column depends on the strength of adsorption, which in turn depends on the type of molecule and on the stationary phase materials. Since each type of molecule has a different rate of progression, the various components of the analyte mixture are separated as they progress along the column and reach the end of the column at different times (retention time). A detector is used to monitor the outlet stream from the column; thus, the time at which each component reaches the outlet and the amount of that component can be determined. Generally, substances are identified by the order in which they emerge (elute) from the column and by the retention time of the analyte in the column. I hope that this will explain in short what this analysis is all about.

Vocabulary

Mobile		Nitrogen		Finely	
Phase		Microscopic		Injection port	
Carrier		Capillary column		Vaporized	
Inert		Distinguish		Syringes	
Helium		Temperature controlled		Trace	

Exercise

1. Choose the correct words in these sentences:

A. Hurry up! You will (lose) (miss) the bus.

B. That tube has come (lose) (loose). It will fall off soon.

C. Do you (expect) (wait for) him to change his mind?

D. If you bet on him to do the job correctly, you will (lose) (loose) your money.

E. He (waited) (expected) at the street corner for over half an hour before his girlfriend arrived.

2. Give the right form of the verbs in parentheses, and arrange the passage into paragraphs.

Let's eat here I said to my wife. I _____ (prefer) to have a drink first she answered. That's a good idea I said. I picked up the menu. I _____- (not understand) a thing I said. It's all in Chinese. It _____ (not matter) said my wife. What _____ that word _____ (mean) I asked. I _____ (not know) she answered. We called the waiter and pointed to the word on the menu. Two I said, holding up two fingers. After some time, my wife said suddenly Look! He _____ (brings) us two boiled eggs!

3. Useful expressions

- All your eggs in one basket
- Any Tom, Dick and Harry
- Goody two shoes
- At point blank
- Put it on ice

4. Create sentences with the following word combinations:

Mobile / carrier

_____

Phase / conduct / now

_____

Inert / finely

_____

Helium / balloon

_____

Nitrogen / microscopic

_____

Distinguish / view

_____

Injection port / syringes

_____

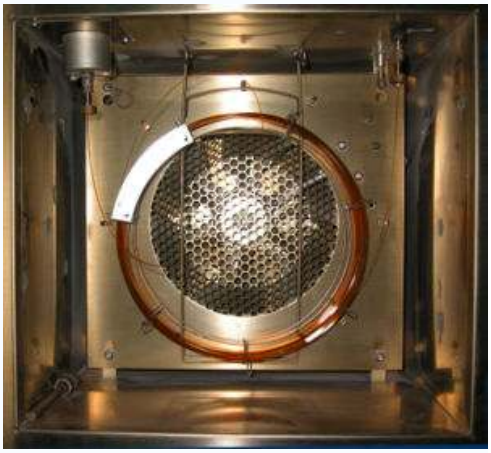
Temperature-controlled

_____

Vaporized / trace

_____

Reading



The column (s) in a GC are contained in an oven, the temperature of which is precisely controlled electronically. (When discussing the "temperature of the column," an analyst is technically referring to the temperature of the column oven. The distinction, however, is not important and will not subsequently be made in this article.)

The rate at which a sample passes through the column is directly proportional to the temperature of the column. The higher the column temperature, the faster the sample moves through the column. However, the faster a sample moves through the column, the less it interacts with the stationary phase, and the less the analytes are separated.

In general, the column temperature is selected to compromise between the length of the analysis and the level of separation.

A method which holds the column at the same temperature for the entire analysis is called "isothermal." Most methods, however, increase the column temperature during the analysis, the initial temperature, rate of temperature increase (the temperature "ramp") and final temperature is called the "**temperature program**."

A temperature program allows analytes that elute early in the analysis to separate adequately, while shortening the time it takes for late-eluting analytes to pass through the column.

1. What will happen if the column temperature is higher?

   _____

2. Why must a sample be salt- free?

   _____

Discussion

1. How do you think that the quality control inspector's results can influence production.
2. Do you think customers are very interested in GC results?

Lesson 14
"Touchdown IQ"

Introduction to Touchdown IQ

HERBICIDE

Active Ingredient: TOUCHDOWN IQ contains 500 g/litre GLYPHOSATE as the potassium salt in the form of a soluble concentrate.

For the control of a wide range of annual and perennial Grass and Broadleaf weeds in Agriculture, Horticulture, Forestry, Industrial areas, Recreational areas and for other uses including general weed control.

Dialogue

Frank:	Jion, are you still enjoying the visit to Syngenta?
Jion:	**Yes, thank you Frank. I hear so many interesting things and the people are so friendly.**
Frank:	Yes, the staff of Syngenta is very friendly and good at what they are doing. Look at this packaging for instance.
Jion:	**I wanted to ask you, what is happening here? It looks like a packing procedure for a product..**
Frank:	Yes you are right. It is the packing for one of our products. The product name is Touchdown IQ. It is a herbicide.
Jion:	**Is there specific packing stipulations for different products?**
Frank:	Yes, we have stipulations for each product. Look at this profile. It indicates the product, ID, reference, date edition and page
Jion:	**How do Syngenta store its products?**
Frank:	Jion, each product has specific instructions regarding storing. It is very important that we do not mix products. Therefore all the shelves in the warehouse indicates the product's location
Jion:	**I agree, it will be very inconvenient when there are no good warehouse system.**
Frank:	Syngenta is very proud to say that their supply chain is very effective. Like the touchdown IQ . The packaging and storage as very well indicated on the products procedures leaflet.

Vocabulary

Packaging		Corrugated cardboard		Expiration date	
Stipulates		Inner divider		Designated area	
Poly bottle		Formulation		Lattice wall	
High density		Supply chain		Foreign material	
Polyethylene		Bulk		Amount	

Exercise

1. Supply *could, was able to* or *managed* in this paragraph.

Elvis _____ set up his camp close to the volcano while it was erupting violently. Though he _____ taken a number of brilliant photographs, he _____ not stay near the volcano for very long. He noticed that a river of liquid rock was coming towards him. It threatened to surround him completely, but Elvis escaped just in time. He waited until the volcano became quiet and he _____ return two days later. This time he _____ climb to the mouth of the Volcano so that he _____ take photographs and measure the temperature.

2. Supply the correct form of *say* or *tell* in the following sentences:

A. He is only five, and he can already _____ the time.

B. They asked the prisoner several questions, and he _____ nothing.

C. When you _____ so, I suppose it's true. I do not think you will _____ to me.

D. They are so alike, I cannot _____ the difference between them.

E. He _____ me about his visit to Syngenta.

F. If you would _____ a good word for him, he might get the job.

3. Useful expressions

- At the top of my lungs
- Average Joe
- As the crow flies
- Set off on the wrong foot
- Law of the jungle

4. Create sentences with the following word combinations:

Packaging / avoid

_____

Stipulates / poly-bottle

_____

High density / polyethylene

_____

Corrugated cardboard / inner divider / insist

_____

Formulation / amount

_____

Supply chain / bulk / persistent

_____

Expiration date / designated area

_____

Foreign material / cause

_____

Reading

Introduction to Non-Selective Herbicides

NSH's are used under different patterns according to the crop:

- In plantation crops (rubber, oil palm, orchards, vines) they are applied on weeds growing between the trees for several purposes: to facilitate passage in tropical crops, to save moisture in vines and orchards, to reduce cultivation or erosion associated with cultivation. Typically these herbicides can be applied without damage to the bark of trees but not to the leaves.
- In annual crops in several modes:
- Pre-planting to eliminate weeds prior to planting. The objective is also to reduce cultivation.
- Early post planting prior to crop emergence
- Post planting, intergrowth spraying with spray guards to protect the crops
- Pre-harvest to desiccate weeds and crops
- Post harvest to reduce perennial weeds.
-

NSH's mostly belong to two groups according to their properties:

- Contact herbicides (and or desiccants) only affect the area sprayed, they are usually fast acting and rain-fast. They work well on annual species and are adapted to quickly remove the vegetation prior to planting especially in tropical environment. Roots remain intact thus allowing good erosion prevention. Gramoxone is a good example of this class.
- Systemic herbicides: the product moves within the plant from the point of contact, typically towards the growing points that will be destroyed. They are well adapted to controlling perennial species that have strong root systems. They usually require time to penetrate and migrate within the plant and tend to be slow acting. Touchdown is a good example of such products.

1. What doe NSH stands for?

   _____

2. Name 3 plantation crops.

   _____

3. To what two groups does NSH belongs too?

   _____

4. What areas does a contact herbicide affect?

   _____

5. Does a Systemic herbicide need time to migrate?

   _____

Discussion

1. What do you know about touchdown IQ?
2. Is the packaging procedures very important or does it just waste time?

Lesson 15
Warehousing

Introduction to Warehousing

A **warehouse** is a commercial building for storage of goods. Warehouses are used by manufacturers, importers, exporters, wholesalers, transport businesses, customs, etc. They are usually large plain buildings in industrial areas of cities and towns. They come equipped with loading docks to load and unload trucks; or sometimes are loaded directly from railways, airports, or seaports. They also often have cranes and forklifts for moving goods, which are usually placed on ISO standard pallets loaded into pallet racks.

Dialogue

Frank:	Jion, let us walk to the warehouse facility of Syngenta
Jion:	**Thank you Frank. I was wondering what happen to the products that are finished.**
Frank:	Well, Jion, they are transported to our warehouse where they are stored till shipping date. We also store our raw materials in the warehouse.
Jion:	**How do you move the boxes to the warehouse?**
Frank:	Do you remember we have the boxes with finished products stacked on pallets in the production area. From there they will be transported to the warehouse, using a forklift
Jion:	**What about the raw materials?**
Frank:	Most of our raw materials come in bulk. Some of it will be stored in that big drums, while sum of the materials will be stored in the silos. From there they will be transported by pipeline to the production area.
Jion:	**Why will you use a pipeline?**
Frank:	Jion, some of our products are in liquid form, and not easy to transport. Remember our products are toxic.
Jion:	**Frank I must comment, it seems that Syngenta has an answer for all my questions.**
Frank:	Syngenta is very organized, and use the latest technology in many ways.

Vocabulary

Requisition		Raw materials		Logistics	
Purchase order		Vendor		Dry	
Inventory		After Service		Locked	
Just in time JIT		Platform		Shelves	
Crane		Automated		Overhead crane	

Exercise

1. Put in *across, over, between, off, along, in, on, into, out of*, or *under*:

A. The aeroplane is flying _____ the corn field.

B. The ship is going _____ the Shanghai bridge.

C. The boy is swimming _____ the Yellow river.

D. To mice is running _____ the wall.

E. The finished goods are _____ the shelf.

F. The chemicals are _____ the refrigerator.

G. The operator is jumping _____ the forklift.

H. Jion is walking _____ Frank and Yvonne.

I. It is 9 o'clock. The workers are going _____ work.

J. It is 5 o'clock. The workers are coming _____ work.

2. Complete the sentences:

A. These gloves belong to Frank. They are _____

B. This overall belongs to me. It is _____.

C. These pens belong to my secretary. They are _____.

D. This file belongs to you. It is _____.

E. These books belong to Syngenta. They are _____.

3. Useful expressions

- Millstone around one's neck
- There's no place like home
- On the ball
- Out of the blue
- At a snail's pace

4. Create sentences with the following words:

Raw materials / vendor

_____

After service / spectacle

_____

Platform / forklift

_____

Automated / speed / logistics

_____

Dry / lock / gate

_____

Shelves / clean / crane

_____

Overhead crane / safety hat

_____

Just in time / delivery

_____

Inventory / warehouse

_____

Purchase requisition / purchase order

_____

Reading

The internet has had an influence on warehouses too. Internet based stores do not require physical points of selling. However, warehouses are still required to store the goods. Since direct contact with customers means many small orders, this is a different situation where stores would be ordering large numbers of goods. Simply said, warehouses change from shipping large quantities of goods to shipping large numbers of small quantities of goods.

Having a large and complex supply chain containing many warehouse may be costly. Sometimes, it is beneficial to have one large warehouse per continent. This warehouse should be located at a central point, where transport is available to all other destinations. At these continental hubs, goods have to be customized for different countries. For example, goods get a price ticket in the language of the country where it will go. Making small adjustments to goods at a warehouse is called value added services.

1. Re-write the article in your own words. Not more than 50 words.

Discussion

1. How will the internet influence business in the future?

Lesson 16
Maintenance

Introduction to Maintenance

Maintenance, Repair and Operations or **Maintenance, Repair and Overhaul** (**MRO**) is fixing any sort of mechanical or electrical device should it become out of order or broken (repair) as well as performing the routine actions which keep the device in working order (maintenance) or prevent trouble from arising (preventive maintenance).

Dialogue

Frank:	Well Jion, we are coming to the end of the tour. The last place I want to introduce you is our maintenance department.
Jion:	**I cannot believe it. The time went so quickly. This was an interesting visit. Ok. Is this the maintenance area.**
Frank:	Sort off. You see Jion, maintenance work most of the time at the production areas. They are always on standby to resolve a problem when it occurs.
Jion:	**I see. I remembered when we saw the leakage in the EC line, the maintenance technician was quickly there to solve the problem.?**
Frank:	That is correct Jion. We cannot afford to have a long down-time. We rely on the quick reaction of our maintenance staff.
Jion:	**What happens when a working component break?**
Frank:	Most of the time our maintenance department can repair it in-house. They have the equipment to repair the broken part and sometimes make a replacement part.
Jion:	**As I mentioned before, Syngenta's staff are really great. I see the workshop is very clean. Any reason for that?**
Frank:	Jion, no one can work in a dirty environment. Putting the tools at the right place make it easier to find in the future. Clean tools are always easier to use.
Jion:	**O my, I need to learn from Syngenta. At home it takes a long time to find some thing when I look for it. I will take this lesson home.**
Frank:	Hahaha, I must ask you money. You learned so much today. Thank you Syngenta.

Vocabulary

Screw driver		Grinding machine		Voltage	
Panel		Drill press		Breaker	
Toolbox		Monkey wrench		Bus bar	
Spanner		Hammer		Transformer	
Lathe		Gearbox		Spring	

Exercise

1. Choose the correct words in the following sentences:

A. He came to see me yesterday as (usually) (usual)

B. There was no one I knew (among) (between) those present.

C. The (headmaster) (manager) of the store is very busy.

D. Children's (cloths) (clothes) are difficult to choose.

E. He never (greets) (salutes) anyone at the security gate.

F. Your hand are not very (clean) (clear), are they?

G. Yvonne is in the laundry. She is (washing) (washing up) the cloths.

H. If you lose your (temper) (mood) you will regret it.

I. The problem is (enough) (too) difficult for me.

J. He is (enough) (fairly) good at his work.

K. He is trying hard but his work is still not good (enough) (fairly).

L. Young people should remain (free) (single) for a few years before they marry.

M. There was a long (row) (queue) in the bank.

N. I have taken (up) (on) guitar lessons in my spare time.

O. Can you make (on) (out) the address on the package?

P. If you fail (in) (at) this attempt, don't count (for) (on) me for help.

Q. He wanted to borrow a spanner (of) (from) me but he was shy (too) (in) asking.

2. Useful expressions

- Axe to grind
- X marks the spot
- Writing is on the wall
- White elephant
- Under the weather

3. Write and email to Syngenta thanking them for the opportunity to take part in the English coaching.

Reading

Growing with Syngenta

Syngenta has been highly successful since it was created in 2000 and the company continues to grow. We are one of the world's leading businesses in a vital and exciting growth sector worth around $60 billion.

Our enthusiasm for innovation helps farmers everywhere meet the challenges global agriculture is facing. As the challenges increase, so do the opportunities for our business. This raises the potential for our employees to grow and develop their careers in a dynamic and stimulating working environment.

Working for us provides plenty of opportunities to participate in a wide variety of projects, tackling important issues at the cutting edge of our industry. Our employees also have the potential to gain international exposure, whether that's developing a global career or working alongside colleagues from over 90 countries worldwide.

Our leaders liberate the potential of our people

The Syngenta culture positively encourages personal and professional growth through creating opportunities to learn and grow on a daily basis. Both our global reach and the sheer range of careers we offer provide opportunities for employees to excel by releasing their full potential. All employees have individual development plans for their career progression, which are regularly reviewed and discussed with their line managers.

We place a great emphasis on developing our culture, leadership and people management skills, and have invested heavily in development programs and events. Our global Leadership Development Program not only helps managers improve their effectiveness as business leaders but also as coaches of their employees.



Discussion

1. Did you breach your goals that you set yourself in the beginning of the course?
2. How do you see your own future?

Appendix
Shopfloor words

Vocabulary	Translation	Example
AC	交流（电）	
5S	seiri seiton seiso seiketsu shitsuke整理，整顿，清扫，清洁，教养（日文）	
5W1H	what, where, who, when, why, how	
accelerate	加速	
acceptance criteria	接受标准	
accident investigation	事故调查	
acetic acid	醋酸	
acetone	丙酮	
acetonitril	乙腈	
Actara	阿克泰（产品名）	
active ingredient	活性成分	
active power	有功（功率）	
activity board	活动板	
adjust	调节	
after service	售后服务	
agitator	搅拌器	
agriculture	农业	
AI (active ingredient)	活性成分，原药	
alarm	报警	
AM	Automatons Maintenance自主维护	
Ambition	理想	
Amistar	阿米西达	
Ampere/ Amp.	电流单位（安培）	
Amure	爱苗	
analyze	分析	
analysis	分析	
Annual Leave	年假	I plan to ask for two days annual leave next Monday. 下周一我打算请两天年假
APAC	Asia & Pacific 亚太区	
application	申请	
approve	批准	
arrangement	安排	
Assistant	助理	
audit	审核	
availability rate	时间利用率	

Backbone	特指先正达支柱
bag empty device	倒袋机
balance	天平
bar coding label	条形码标签
Barcode	条形码
batch No.	批号
beaker	烧杯
benchmark	基准
big bag	大袋
bond	跨接
bottle	瓶子
Brand	品牌
breakdown	宕机
breaker	破碎机
Breaker	断路器
breathing valve	呼吸阀
Bringing plant potential to life (Purpose of Syngenta)	激发植物潜能，焕发精彩生活（先正达使命）
British system	英制
brush	刷子
BSC	Balance Score Card平衡计分卡
blue tag	蓝牌
bulk	原料药
Bus bar	母线
cap	盖子
Capacitor	电容器
Capacity	产能
capacity	容量
capper machine	瓶盖机
carton	纸箱
Cartridge	滤盒
Celest	适乐时
certificate	合格证
chain	链条
chain wheel	链轮
check	核查/检验

chemical	化学品
Chorus	和瑞（产品名）
CI	Continues Improvement 持续改进
circuit breaker	保护断路器
CLIT	clean, lubricate, inspect, tighten清洁，润滑，点检，紧固
Coach	训练，教导
CoC	Code of Conduct行为准则
commissioning	试车
Complaint	投诉
component	成分
concentration	浓度
conduct	引导
confidential	秘密的
conical mixer	锥形混合罐
connector	接头
container	移动的储罐
contamination	污染
conveyer	传送带
Coracron	库龙
corrective action	纠正行动
corrupt	腐蚀
cost	成本
cover	盖子
CP	Crop Protection作物保护
critical	关键的
Cruiser	锐胜（产品名）
current	电流
Dacotech	达科宁（产品名）
daily working	日常工作
DC	直流（电）
DCS	Distributed Control System分散控制系统
decelerate	减速
definition	定义
De-ion water	去离子水
delivery	交货
density	密度
department	部门
developing	发展中
dilute	稀释
discipline	纪律

Dispensability under water	水分散性
dissolve	溶解
distil	蒸馏
Dividend	敌委丹
document	文件
downtime loss	停机损失
drain	下水道
drain	排尽
drill press	钻床
dropper	滴管
drum	桶
Dual-G	金都尔
EC	Emulsifiable Concentrate乳油剂
efficiency	效率
effluent	污水
electric drill	电钻
email	电子邮件
empty drum	空桶
Emulsion Stability	乳液稳定性
Engineer	工程师
equipment	设备
ethanol	乙醇
extinguisher	灭火器
eye washer	洗眼器
facility	设施
family day	家庭日
fan	风扇
field	田地，领域
file	文件
finished goods	成品
filling machine	灌装机
film	卷膜
filter	滤芯
filter	过滤器
filtrate	过滤
fire	火灾
fireproof blanket	防火毯
First aid	急救
flange	法兰
flash point	闪点

flask	量瓶
floor	地面，场地
foil	铝箔
folding box	折盒
forced deterioration	强制劣化
forklift	叉车
forklift	叉车
Formulation	配置
formulation	配制
Frameworks	特指先正达纲领
Fungicide	杀菌剂
funnel	漏斗
gas detector	气体探测仪
GC (gas chromatography)	气相色谱
gear box	齿轮箱
glove	手套
goggle	护目镜
good	优良
great	卓越
grinding machine	砂轮机
group activity	小组活动
guidance	指导
hammer	锒头
handover	交接
hazard substance	有害物质
heating	加热
helmet	安全帽
Herbicide	除草剂
hex key wrench	内六角扳手
high /low level	高、低液位
high voltage	高压
holding tank/mixing tank	搅拌储罐
HPLC (High Performance Liq-uid Chromatography)	液相色谱
HR	Human Resource人力资源
HSE	Health, Safety, Environment 健康，安全，环境
hydrant	消防栓
hydrogen chloride	盐酸
IBC drum	
IIR	Injury and Illness Rates
impedance	阻抗

Selective Herbicides选择性除草剂 ， Non-selective Herbicides非选择性除草剂

incident	事件
indicator	指示剂
inductance	电感
industrial hygiene	工业卫生
injection	注射，进样
injector	注射器，进样器
ink jet	喷墨打印机
inner side	内侧（壁）
Insecticide	杀虫剂
inspection	检查
instruction	说明书/指导书
instrument	仪器
instrument	仪表
introduction	介绍、引进
involve	包括
ISO	International Organization for Standardization国际标准化组织
ISO tank	
jet miller	气流粉碎机
Jido-Ka	自动化（人字旁的动）
JIT	just in time准时化
Kaizen	改善（日文）
Kanban	看板（日文）
Karate	功夫
KF	卡尔. 费休氏
KPI	Key Performance Indication关键业绩指标
label	标签
lathe	车床
launching	下水
layout	布局
leaflet	宣传单
leakage	泄漏
Lean Manufacturing	精益生产
LEV	Local Exhaust Ventilation局部抽风
level	料位计
lift	电梯
lipin	油脂
liquid	液体
loading time	负荷时间
lock out	上锁
LOTO	LOCK OUT/TAG OUT上锁/挂牌

low voltage	低压
lubrication	润滑
maintenance	维护
Manager	经理
mark	标识
Mask	面罩
Match	美除
material	物料
matrix	矩阵
Maxim	满适金
measure	测量
melting point	熔点
methanol	甲醇
middle voltage	中压
milling machine	铣床
MOC	management of change变革管理
monitor	监控
monkey wrench	活动扳手
motor	马达
MTBF	mean time between failure平均实效间隔
MTTF	mean time to failure平均无故障时间
MTTR	mean time to repair平均恢复时间
natural deterioration	自然劣化
needle	针
net operating time	净利用时间
net weight	净重
notification	通知单
nut	螺帽
Occupational diseases	职业病
OEE	Overall Equipment Efficiency设备综合效率
office	办公室
Officer	专员
online testing	在线测试
operating time	利用时间
Operator	操作工
OPL	one point lesson一点课程
orientated label	定位标签
OT	Overtime加班
packaging	包装
packing line	包装线

packing machine	包装机
packing material	**包材**
pallet	托盘
panel	配电/箱
PDCA	1.P（Plan）--计划，确定方针和目标，确定活动计划； 2.D（Do）--执行，实地去做，实现计划中的内容； 3.C（Check）--检查，总结执行计划的结果，注意效果，找出问题； 4.A（Action）--行动，对总结检查的结果进行处理，成功的经验加以肯定并适当推广、标准化；失败的教训加以总结，以免重现，未解决的问题放到下一个PDCA循环。 PDCA循环又叫戴明环, 是美国质量管理专家戴明博士首先提出的, 它是全面质量管理所应遵循的科学程序。
PE ring	防盗圈
performance rate	设备性能率
Pesticide	农药
pH value	pH值
Phillips screwdriver	十字螺丝刀
phosphoric acid	磷酸
physical	体检
PID	Piping and Instrument Diagram管道及仪表流程图
pilot project	实验性项目
pincers	钳子
pipe	管路
pipe	管道
pipet	移液管，滴定管
plant	植物，工厂，车间
platform	平台
PLC	Programmable Logic Controller可编程序逻辑控制器
PM	Planned Maintenance计划维护
PM	Performance Management绩效管理
potassium hydroxide	氢氧化钾
potential	潜能
powder	粉
power	功率
power-factor	功率因素

PP	Professional Products专业产品
PPE	Personnel Protective Equipment劳防用品
PRA	Process Risk Assessment工艺风险评估
preventive action	预防性行动
procedure	程序
process	工艺，过程
Production order	生产订单
production speed	生产速度
productivity	生产力
PTS	powder transfer system真空上料器
PTS (powder transfer system)	粉料转移系统
PTW	工作许可证
pump	泵
Purpose	使命
QA	Quality Assurance质量保证
QC	Quality Control质量控制
qualification	资格
quality	质量
quality loss	缺陷损失
quality product rate	产品合格率
quantity	数量
QUOTIF	
rating	额定
ratio	变比
raw materials	原材料
reactance	电抗
reactive power	无功（功率）
reagent	试剂
recipe	配方
recommendation	推荐
record	记录
red tag	红牌
regulation	规则
relay	继电器
relocation	重新部署
report	报告
resistance	电阻

Purpose is the fundamental reason of existence of a company more than making profit.使命是一个公司在获取利润之外为什么存在的原因。

Respirator	呼吸器
responsibility	责任
RFT	Right First Time首检合格率
RI (residual impurity)	残留杂质
Ridomil-Golden	金雷（产品名）
rinse	冲洗
Risk analysis	风险分析
root case	根本原因
Rotary valve	旋转阀
rust	生锈
sachet	袋
safe	安全
safety	安全
safety glass	安全眼镜
safety shoes	安全鞋
sample	样品
Sandofan	杀毒矾（产品名）
Sandozeb	山德生（产品名）
SC	Supply Chain供应链
Scenario	猜想
Score	世高（产品名）
screw	螺丝（钉）
screw driver	螺丝刀
Screw feeder	加料螺旋
seal	密封
sealing	密封
sealing machine	封箱机
Seeds	种业
semi-finished goods	半成品
sensor	传感器
Severity	严重性
shaker	振荡器
shelf life	货架寿命，有效期
Shift Leader	领班
shipping box	外箱

shower	喷淋
shrink label	热缩标签
Sico	势克
sieve	过筛
sifter	振动筛
slotted screwdriver	一字螺丝刀
SMED	Single Minute Exchange of Die快速换模
sodium hydroxide	氢氧化钠
Sofit1000ml	扫弗特
solid	固体
solution	溶液
solvent	溶剂
SOP	Standard Operating Procedure标准操作程序
spanner	扳手
specification	规格
speed loss	速度损失（性能损失）
spring	弹簧
stainless steel	不锈钢
Stakeholder	利益相关者
standard	标准
static	静电
Step	步骤
stirring	搅拌
stocktaking	盘点
STOP	Safety-Training-Observation-Program的缩写，中文的意思是：杜邦公司安全、训练、观察、计划，简称为STOP，是一种以行为作为基准的观察计划，能让员工拥有达到安全的工作条件。
stoppage	中断
Story	故事
Strategy	战略
suggestion	合理化建议
Supervisor	主管
Supercide	速扑杀
suspensibility	悬浮率
Syngenta	先正达
	Syngenta Crop Protection (Suzhou) CO., Ltd 先正达（苏州）作物保护有限公司

tag out	挂牌
tank	罐子
Technician	技术员
temperature	温度
test	测试
the metric system	公制
thermometer	温度计
titrate	滴定
titrator	滴定仪
toluene	甲苯
tool box	工具箱
torque	扭矩
toxic	有毒的
TPM	全员参与的预防性保养
TPS	Toyota production system丰田生产方式
transfer materials	转移物料
transformer	变压器
transmitter	变送器
travelling crane	行车
ultrasonic	超声波
uniform	工作服
valuable operating time	创造价值时间
Values	价值观
valve	阀门
VCS	visual control system可视化系统
vender	厂家
verify	验证
veneer caliper	游标卡尺
vessel	储罐
vibration	振动
viscosity	粘度
voltage	电压
voltage grade	电压等级
VoS	Voice of Syngenta先正达之声（先正达每年进行的大型员工调查）

VSM	value stream map价值流
Warehouse	仓库
warning specification	告知规范
waste	浪费
waste management/ treatment	废物管理/处理
water bath	水浴
water content	水分
weld	焊接
Wettability	润湿性
WG	Water Dispersible Granule水分散粒剂
wheel	齿轮
working condition	工作环境
workshop	研讨会
WP	Wettable Powder可湿性粉剂
write down	记录下
xylene	二甲苯
zone	地带

Going far beyond the call of duty.

Doing more than what others expect.

That is what excellence is all about.

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