Plant Disease & insect One Step Rapid Test Kit Product information

「actual product photo」

Plant Disease & insect One Step Rapid Tesk kit

JINDANI

ABC Circle

ABC Circle Co., Ltd.

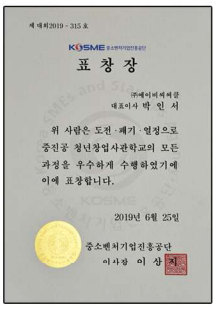
Prevention and control of pests and diseases is now the most important factor in a country's agricultural productivity. So, continuous research and efforts are being made at the national level.
The important thing in effective prevention is accurate diagnosis of the disease and prevention in advance.
Accordingly, through continuous research and development, our company is developing additional diagnostic kits for pests and diseases that are currently a problem.
In addition, we promise to strive to produce safer food by researching and developing treatments for each pest.

-All executives and staff of ABC Circle Co., Ltd.-

Contents

President's Award

Commendation from Small and Medium Venture Business Corporation



Commendation from Rural Development Administration Director

Chungbuk National University Family Company

Chungcheongbuk-do Governor's Commendation

Part of the JINDANI product

Fusarium wilt

10 minutes — 10 Economically within 10 minutes from the farm

1 Technology outline

Target disease	Fusarium wilt (Fusarium spp.)
Sample target	Soil, Stem of soil surface
Specificity	95% over, Sensitivity : 95% over

2 Need for Diagnosis

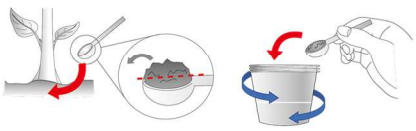
- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

- When infected, wilting symptoms appear on the plant
- Browning of the conduit part when cutting the stem
- Splitting of watermelon vine stems occurs
- Strawberry leaves become shriveled and develop unpaired leaves

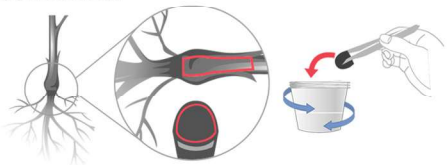
4 How to use

1.Soil sample



After removing the topsoil layer, place the soil around the roots in the buffer, shake well for at least 10 seconds, and let stand for 1 minute.

1.Stem of soil surface

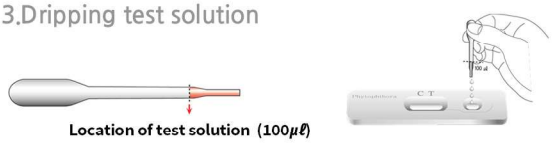


Scrape or chop the discolored xylem(red color), place it in the buffer, shake well for at least 10 seconds, and let stand for 1 minute

2.Supernatant

After settling the soil particles, collect the supernatant. Supernatant: sample layer

3.Dripping test solution

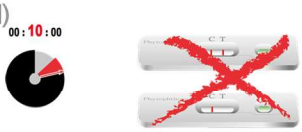


Instill 4 drops of test solution(Do not add more than 4 drops)

4.Results

Read results after 10 minutes

5.Dispose(Test completed)



Ignore results after 10 minutes

5 Control methods

- Avoid continuous cropping and be careful not to be high EC
- If the soil in sandy, use lime to increase the acidity of the soil to maintain pH 6~7
- Take care to prevent the roots from being damaged by nematodes or insects
- Pathogen soil, fresh water fill desalinated or solar disinfected to reduce the density of pathogens in the soil

Phytophthora blight

10 minutes 10 Economically within 10 minutes from the farm

1 Technology outline

Target disease	Phytophthora blight(Phytophthora spp.)
Sample target	Soil, Stem of soil surface
Specificity	95% over, Sensitivity : 95% over

2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

- Leaves, Stems, and fruits cause disease by pathogen rainwater splash
- In the case of nursery, the stems that are in contact with the ground become dark brown, narrow, and gradually dry out and die
- It is a disease transmitted by pathogens through water and spreads rapidly once it occurs
- Rootlet die, and brown or black lesions appear on roots and stems
- Diseased plants in the middle or late growth stage wilt and die


Water melon (*Phytophthora capsici*)


Hot pepper (*P. infestans*)

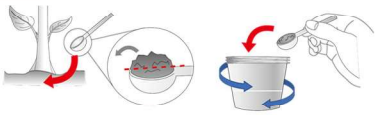

potato (*P. infestans*)



tomato(*P. infestans*)

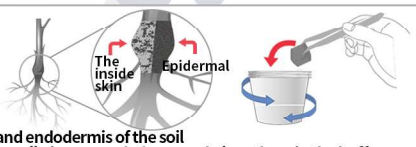
4 How to use

1.Soil sample



After removing the topsoil layer, place the soil around the roots in the buffer, shake well for at least 10 seconds, and let stand for 1 minute

1.Stem of soil surface



Cut the root epidermis and endodermis of the soil surface plant stem into small pieces, mash them, and place them in the buffer

2.Supernatant

After settling the soil particles, collect the supernatant

Supernatant: sample layer

3.Dripping test solution

Location of test solution (100㎕)

Instill 4 drops of test solution(Do not add more than 4 drops)

4.Results

Read results after 10 minutes

5.Dispose(Test completed)

Ignore results after 10 minutes

5 Control method

- Take hygiene measures such as cleaning machinery and tools and removing diseased plant remains and nearby soil
- If possible, choose resistant varieties.
- Avoid using excessive irrigation water and be careful not to splash water as much as possible.
- Disinfect the recirculated nutrient solution before use.
- Drain way maintenance after raising the ridge

Bacterial wilt

10 minutes — 10 Economically within 10 minutes from the farm

1 Technology outline

Target disease	Bacterial wilt (Ralstonia solanacearum)
Sample target	Soil, Stem of soil surface
Specificity	95% over, Sensitivity : 95% over

2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

- Symptoms of wilting of leaves near the growing point appear as if they were scalded in hot water.
- Pathogenic bacteria infect from roots in the soil and multiply in the tylosis and block moisture movement, causing them to wilt.
- If you cut off the stem of a diseased plant, the inside will turn brown.
- It can also be transmitted through wounds caused by agricultural work.
- Occurs rapidly under high temperature and humidity conditions

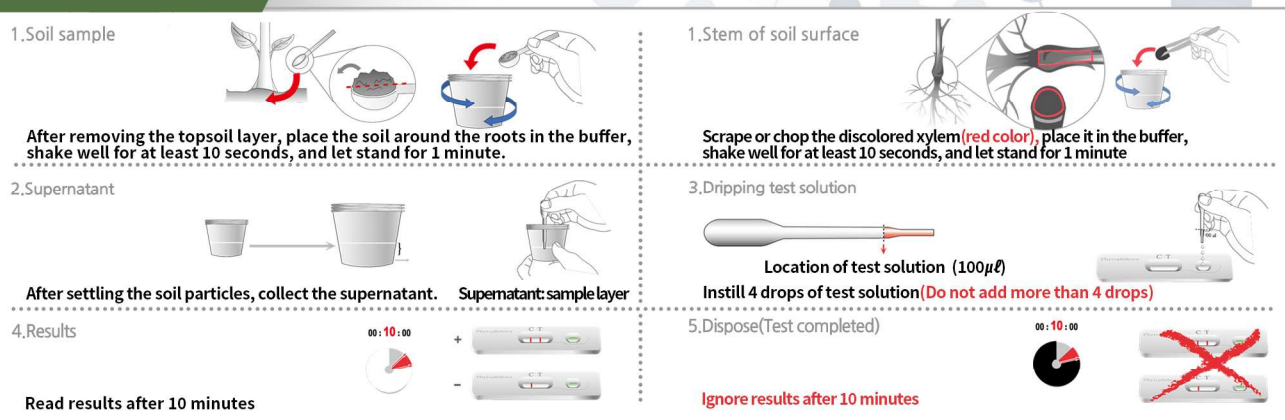
Tomato(*Ralstonia solanacearum*)

egg plant

Hot pepper

SOURCE : NCPMS

4 How to use



5 Control method

- crops are rotated with other crops in fields where contamination has been severe.
- Increase the height of the ridge and to improve water drainage.
- Farms where diseases occur are disinfected using registered pesticide and treatment

Soft rot

10 minutes — 10 Economically within 10 minutes from the farm

1 Technology outline

Target disease	Soft rot (Erwinia carotovora)
Sample target	Soil, Stem of soil surface
Specificity	95% over, Sensitivity : 95% over

2 Need for Diagnosis

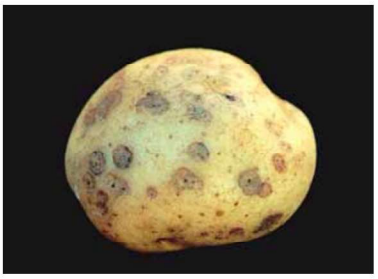
- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

- It is one of the most damaging diseases
- It starts from the petioles or stems of the initial branch' lower leaves and quickly spreads to the leaves, eventually retreating to the inside of the stem and rotting
- If the stem and roots are damaged from the beginning, the outer leaves become severely rotted and rapidly wilt and soften
- If the dry weather continues, the rotted parts turn dark brown and bad smell

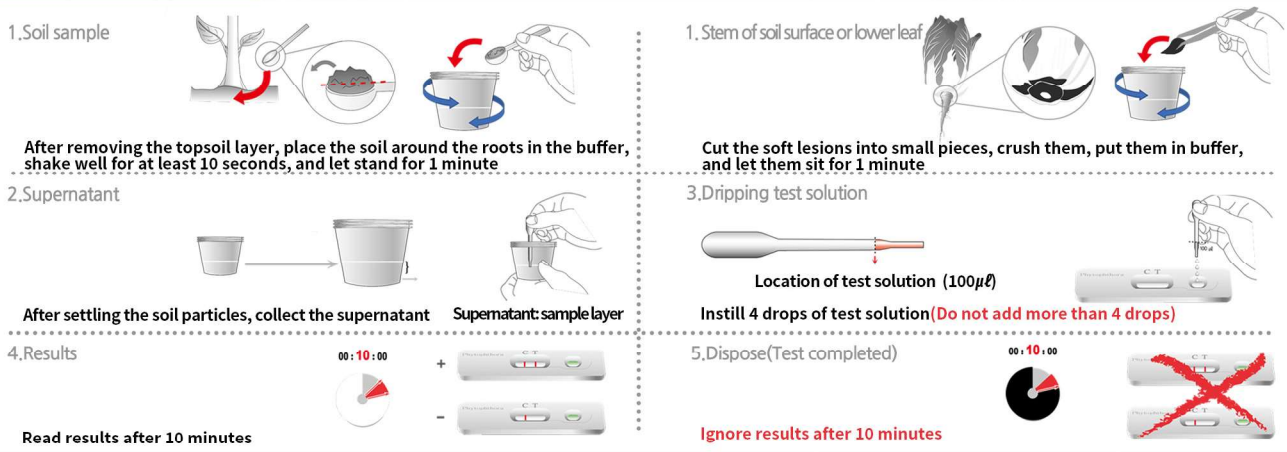
cabbafe bacterial soft rot(*Erwinia carotovora*)

Onion



potato bacterial soft rot (*Erwinia carotovora*)

4 How to use



5 Control method

- The best measure is to prohibit repeated cultivation.
- Since cabbage is extremely susceptible to this disease, it is best not to cultivate cabbage or radish for 2 to 3 years even if it did not occur much in the previous year.
- Damage from pests must be minimized because pathogen is penetrating through traces of pest damage

Fire Blight

10 minutes — 10 Economically within 10 minutes from the farm

1 Technology outline

Target disease	Fire Blight (Erwinia amylovora)
Sample target	Infected part, Suspicious part
Specificity	95% over, Sensitivity : 95% over

2 Need for Diagnosis

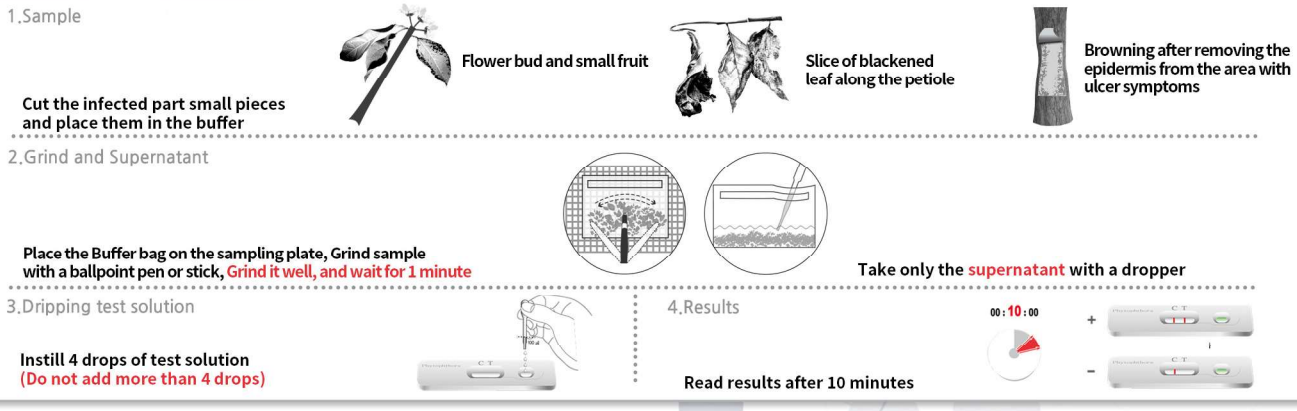
- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

- It is important to diagnose infection early.
- A plant disease caused by plant pathogenic bacteria infecting Rosaceae hosts such as apples and pears.
- Tissues such as flowers, leaves, branches, stems, and fruits dry out to a dark brown color, as if they have been burned.
- It is characterized by the formation of ulcers on the trunk or branches of the tree.
- If symptoms worsen, the entire fruit tree may die.

※ Show symptoms similar to Black shoot blight (Erwinia pyrifoliae)

4 How to use



5 Control method

- Among the control methods, the most important are prevention-oriented clean orchard management and the use of healthy young seedlings
  Remove potential sources of contamination pathogens by keeping the orchard and its surroundings clean.
- Clean management : To prevent the inflow of contaminants, hands, feet, gloves, hats, work clothes, etc. are thoroughly disinfected upon entering the orchard. Clean and disinfect all work tools used by soaking them in 70% ethanol for at least 5 minut

Nematode

10 minutes — 10 Economically within 10 minutes from the farm

1 Technology outline

Target disease	Root knot nematode (Meloidogyne incognita)
Sample target	Infected root, Suspicious part
Specificity	95% over, Sensitivity : 95% over

2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

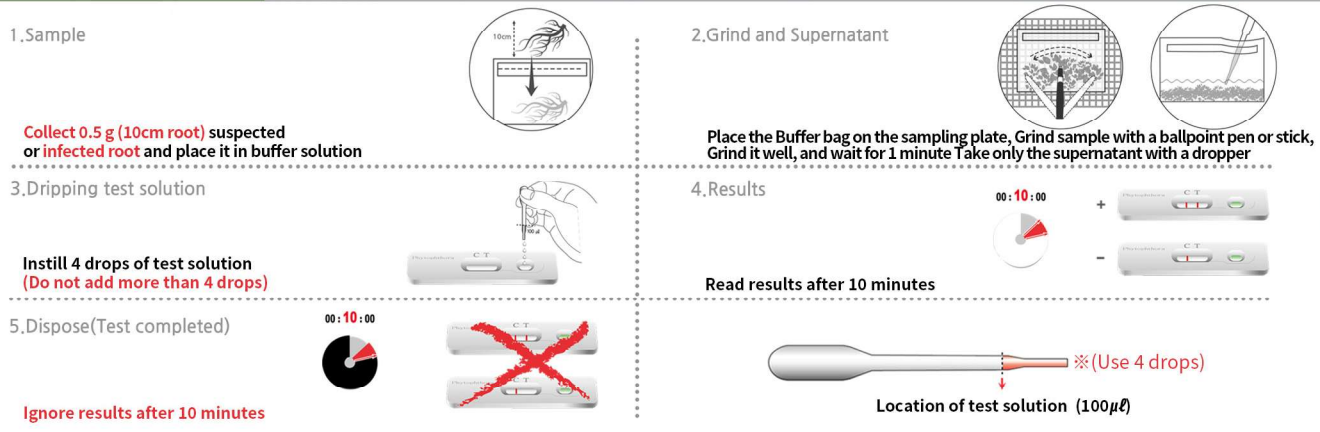
3 Target disease symptoms

- The growth of shoot system, so it does not grow well and wilts easily.
- Several large and small nodules appear on the roots.
- Larvae penetrate through the epidermis of plant roots with their stingers.
- The formation of root nodules causes trouble absorbing moisture and nutrients, inhibits crop growth due to impaired root extension, and causes crop death
- Invasion of plant pathogens into roots can cause disease.


뿌리혹선충 (오이,참외,수박등)


Strawberry(left : Pratylenchus penetrans, Right : Root knot)

4 How to use



5 Control method

- It mainly moves along the soil (tillage, farm equipment, agricultural products, seedlings, shoes, etc.)
- or water must be cleaned thoroughly
- Moves very slowly through soil under its own power (1 m per 3 months)

Prevent damage and spread through early virus diagnosis

1 Technology outline

Target disease	TSWV (Tomato spotted wilt virus)
Sample target	Infected part, Suspicious part
Specificity	95% over, Sensitivity : 95% over
Insect	Thrips
Target crops	Tomato, Hot papper, Egg plant, Leaf vegetables, Potato, Peanut, soybean, Chrysanthemum

2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

- If seedlings are infected, the tissue at the tip becomes necrotic.
- Growth is slow and signs of shrinking appear.
- In the early stages of development, leaves at the tip turn light green to purple.
- During the coloration period, areas showing symptoms of the disease do not coloration and become deformed, reducing marketability.
- Thrips absorb viruses during the larva stage and they also keep virus in pupa stage in soil
- After molting, the pupa becomes a winged adult and moves to nearby crops, spreading viral diseases.


Tomato (shoot atrophy necrosis)

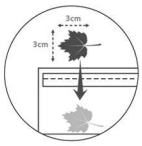

Tomato (stem necrosis)


Hot Pepper (Toerokling)


Tomato (collar disease)

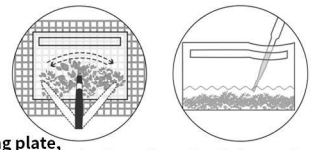
4 How to use

1.Sample



Collect 0.5 g (3cm x 3cm) suspected or infected leaf and place it in buffer solution

2.Grind and Supernatant



Place the Buffer bag on the sampling plate, Grind sample with a ballpoint pen or stick, Grind it well, and wait for 1 minute

3.Dripping test solution

Instill 4 drops of test solution (Do not add more than 4 drops)

4.Results

Read results after 10 minutes

5.Dispose(Test completed)

Ignore results after 10 minutes

※(Use 4 drops)

Location of test solution (100㎕)

5 Control method

- After diagnosis, early infected seedlings are quickly removed.
- Install insect screens to prevent thrips from entering.
- When thrips occur, weeds that serve as host plants are removed and controlled with registered pesticide
- It is important to monitor thrips using sticky traps

Prevent damage and spread through early virus diagnosis

1 Technology outline

Target disease	CMV(Cucumber mosaic virus)
Sample target	Infected part, Suspicious part
Specificity	95% over, Sensitivity : 95% over
Insect	Aphids(The disease is mainly transmitted and spread by winged aphids.)
Target crops	Over 470 types of tomatoes, peppers, etc.

2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

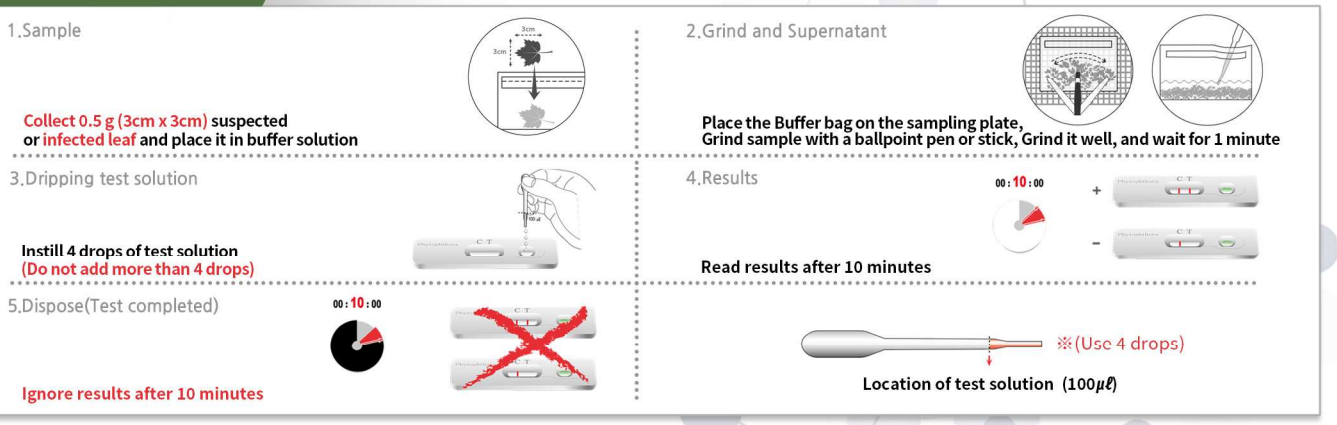
- It is transmitted by aphids, so it is important to prevent aphids from flying in.
- Yellow spots are formed on new leaves and small wrinkles are formed on the leaves.
- As the leaves grow, yellow mosaic symptoms become more stong and the entire leaf becomes shriveled


Cuccumber


pumpkin


Tomato

4 How to use



5 Control method

- It is important to eliminate infected crop through rapid diagnosis at the first symptom.
- Before transplanting, test them with a diagnostic kit before planting them.
- Install netting when seedlings to prevent aphids from flying in.
- Crop rotation without growing the same crop for max three years
- Minimize diseases caused by aphids thoroughly controlling aphids well

Prevent damage and spread through early virus diagnosis

1 Technology outline

Target disease	CGMMV(Cucumber green mottle mosaic virus)
Sample target	Infected part, Suspicious part
Specificity	95% over, Sensitivity : 95% over
Infection	Soil, Seed, Contact
Target crops	Cucumber, Watermelon, melon

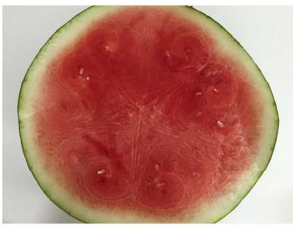
2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

3 Target disease symptoms

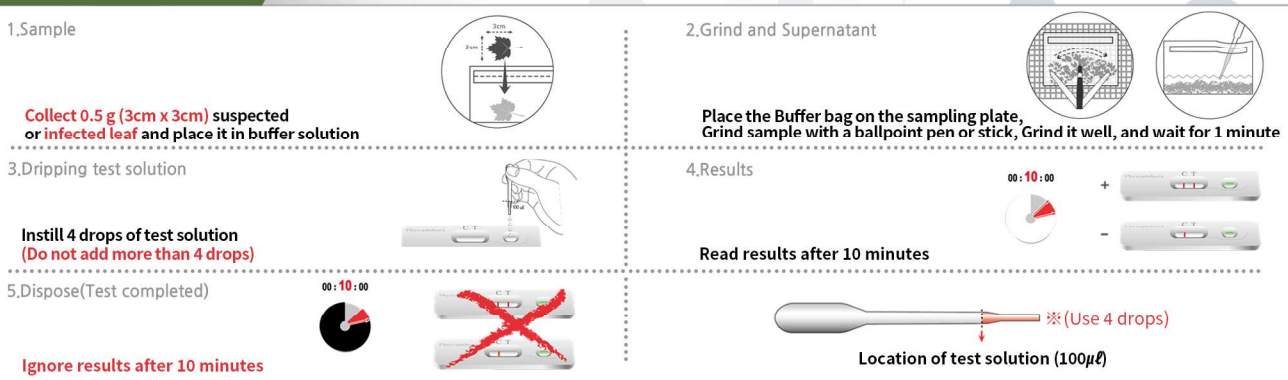
- It is a highly contagious virus and is transmitted through various methods such as seed, contact, and soil transmission
- It is easily transmitted from diseased plants, so prompt removal is important
- Young leaves appear with yellow spots, are smaller than normal leaves, and have symptoms of curling upward
- Also infected by stinging nematodes
- It exists in the remains of roots, stems, etc. in the soil and can remain for more than one year
- Infected from wounds on roots or leaves


Mosaic of leaves and fruits

Mosaic of leaves and fruits of watermelon
source : NCPMS

4 How to use



5 Control method

- It is important to eliminate infected crop through rapid diagnosis at the first symptom
- Before transplanting, test them with a diagnostic kit before planting them
- Seeds are certified seeds that have been disinfected by dry heat
- It is important to disinfect your hands and work tools when working
- Crop rotation without growing the same crop for max three years

Prevent damage and spread through early virus diagnosis

1 Technology outline

Target disease	BBWV2(Broad bean wilt virus2)
Sample target	Infected part, Suspicious part
Specificity	95% over, Sensitivity : 95% over
Infection	Crop juice, aphids
Target crops	Hot pepper, Soybean, spinach, Lily

2 Need for Diagnosis

- Is there a disease or not?, Check soil heathy or not, Quick and appropriate prescription through early detection of disease

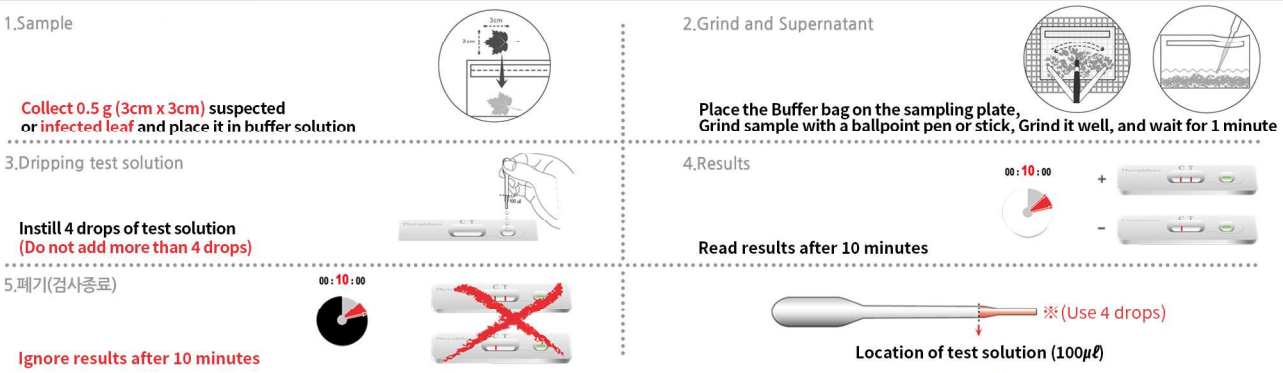
3 Target disease symptoms

- Symptoms of leaf light color and mosaic appear.
- It is not a major problem when infected alone, but when combined with other viruses such as CMV, leaf color light and mosaic symptoms become severe

Leaf mosaic and color light weak
(BBWV2 and CMV complex infection)

Color light weak
(BBWV2 and PepMov complex infection)

4 How to use



5 Control method

- It is important to eliminate infected crop through rapid diagnosis at the first symptom
- Before transplanting, test them with a diagnostic kit before planting them
- Install netting when seedlings to prevent aphids from flying in
- Aphids are captured by installing yellow sticky traps
- Minimize diseases caused by aphids thoroughly controlling aphids well

ABC Circle Co., Ltd. President's Award

⌜JINDANI press release⌝

연합뉴스

#기상예보 #아시안게임 #공화당 #서울시 #소비자물가

뉴스홈 | 최신기사

농식물창업대회 대상에'토양병 신속 진단키트' 에이비씨써클

송고시간 | 2021-11-16 11:00

이영섭 기자
기자 페이지

㈜에이비씨써클이 개발한 토양병 신속 진단키트
[농림축산식품부 제공. 재판매 및 DB 금지]

(서울=연합뉴스) 이영섭 기자 = 농림축산식품부는 제7회 농식품 창업 대회에서 작물 토양병 신속 진단 키트를 개발한 ㈜에이비씨써클이 대상을 받았다고 16일 밝혔다.

기존에는 토양병을 진단하려면 전문 분석기관에 의뢰해 기간은 1~2주, 비용은 약 20만원이 소요됐다. ㈜에이비씨써클이 개발한 키트로는 재배 현장에서 10분 만에 진단할 수 있으며 비용은 1만5천원에 불과하다.

박인서 ㈜에이비씨써클 대표는 "토양병 진단 전문가가 부족한 개발도상국에서 혁신적인 농업 생산 활동에 도움이 될 것"이라고 말했다.

YONHAP NEWS ANENCY

한국일보 지역

"멸종 위기 바나나, K-키트가 구한다"

입력 2023.07.17 04:30 수정 2023.08.06 11:04 | 회 19면

한덕동 기자 구독 +

[우리동네 강소기업]<6> 충북 진천 'ABC써클'
세계 유일 토양병 진단 키트 '진단이' 개발
신속·정확 진단으로 전염병 확산 조기 사단
치료법 없는 '바나나병' 연구 투입, 큰 기대

| 편집자주
지역경제 활성화는 뿌리기업의 도약에서 시작됩니다. 수도권 대기업 중심의 산업구조가 가진 한계를 극복하고 고군분투하는 전국의 뿌리기업 얘기들을 전합니다.

박인서 ABC써클 대표가 14일 충북 진천 본사 공장에서 토양의 중요성을 설명하고 있다. 진천=한덕동 기자

HANKOOKILBO

Data source https://youtu.be/tQgxpcwLXvs

2022.03.28/news2day/MBC

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