

PESTICIDES DETECTION IN ORGANOCHLORINE & PYRETHROID)

Organochlorine- Pyrethroid

G9-TM2 KIT (30 Test)

อ่านผลการทดสอบ

ชื่อสารมาตรฐาน	LOD (mg/kg)	ค่า Rf สารมาตรฐาน
1. Cypermethrin	3.1	0.5, 0.53, 0.58
2. Permethrin	1.9	0.71, 0.83
3. Deltamethrin	2.2	0.91
4. Endrin	0.3	0.82
5. Endosulfan	0.73	0.89
6. DDT	0.19	0.94



Water Bath System



UV System



Accessories equipment Set



REAGENTS ORGACHLORINE & PYRETHROID





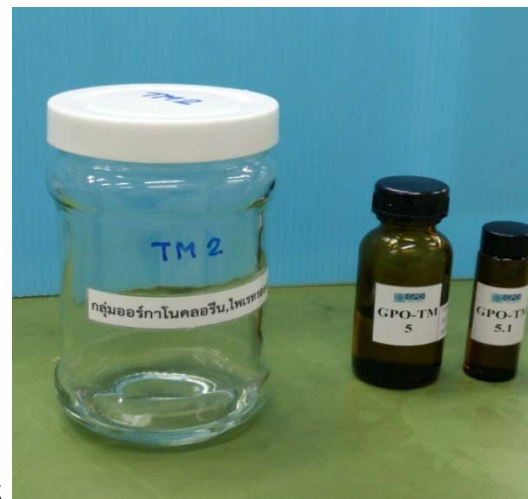
Sample extract preparation

1.1 preparation the sample 1.2 take 5 gram (~4-6 mark) 1.3 take 5 ml.bottle sample 1.4 wait for 5 minute



Process to detecting pesticides in food (OC/PYr)





1 Prepare reagent TLC Tank

GPO TM5 = 10 mL + GPO TM5.1 = 2mL put down and wait till 30 minutes



2 Preparation sample



2.2 5gram sample

2.1 small sample



2.3 extract reagent 5mL put 1 minute and wait 5 minutes

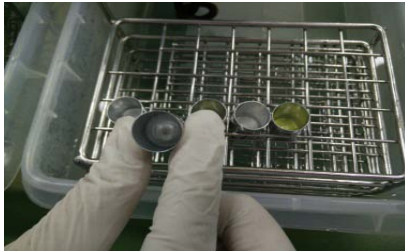
3 preparation the extract reagent



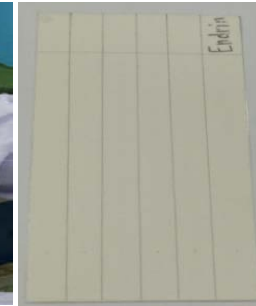
warm water -50 degree waiting till remain 2-3 dose

if dried reagent -2

dose



Tube spot until reagent move spot1: 1 sample



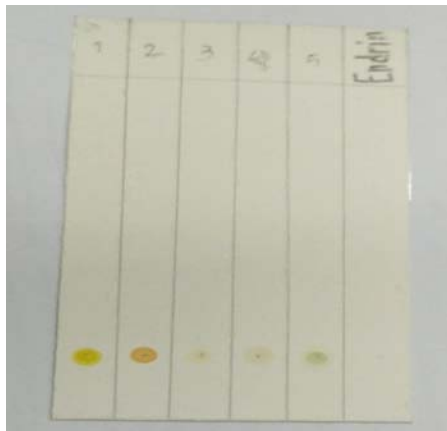
Mark sample name TLC



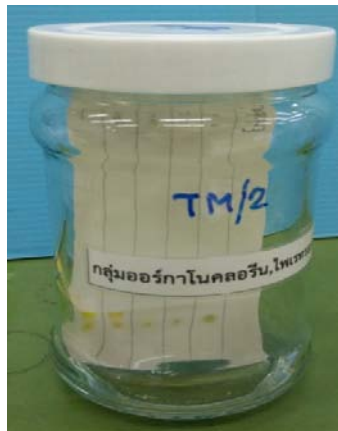
TLC continuing



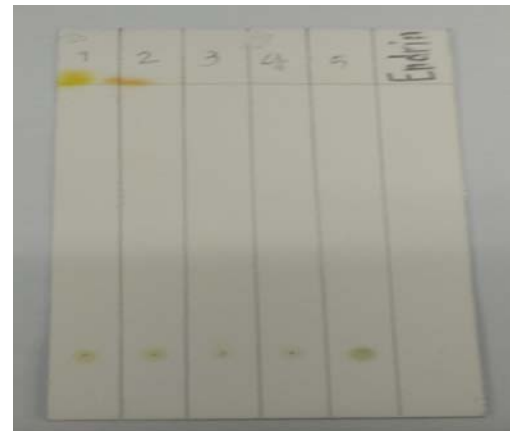
4 TLC Continue



Spot completed all range



take TLC put into bottle TLC take it out when yellow (wait until dry)



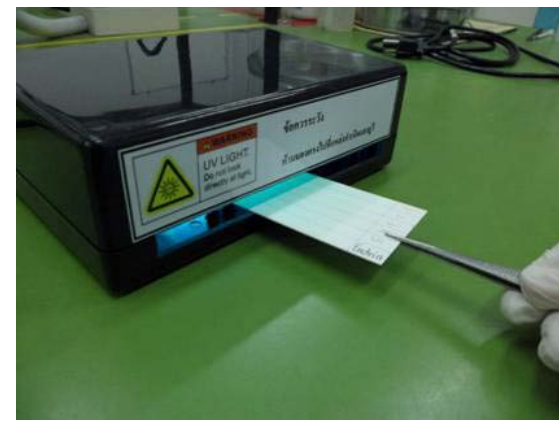
5 Color Test



Spray TM4 full paper card



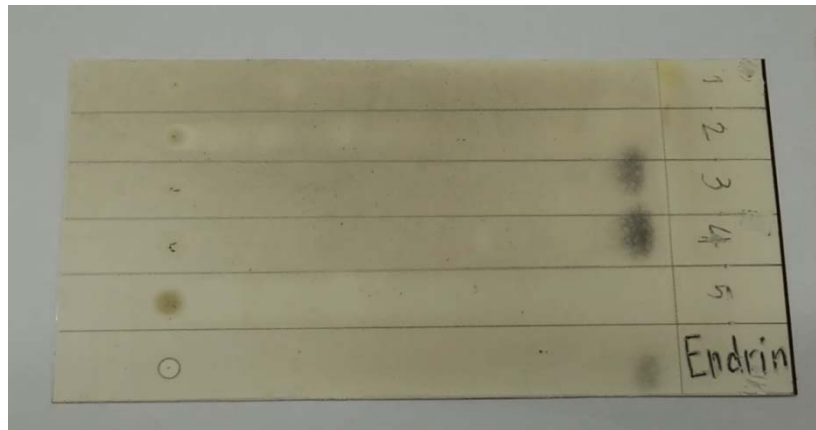
wait 1 minute



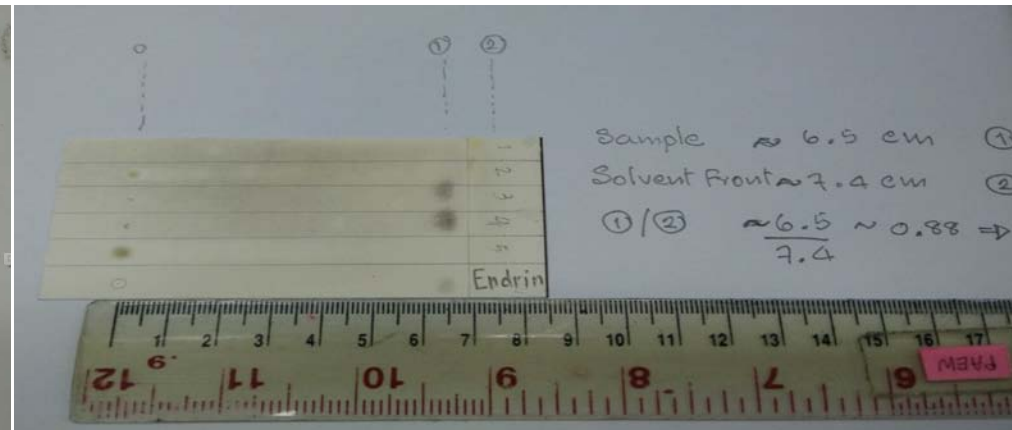
TLC-UV 254nm 3-5 minutes beware fires

6 Result

calculate Rf = sample /solvent front



Result spot down dard on TLC



Sample = distance spot the solution center spot positive result
 distance Solvent front = the solution spot The liquid detergent line TLC

Thank you for your reading

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UV System

6. Interpretation

Positive Found grey, brown-black spots on the TLC aluminum sheet. This shows that there is organochlorine and pyrethroid pesticides.

Negative No spot on the TLC aluminum sheet was found. This shows that there is no Organochlorine and Pyrethroid pesticide.

Test Result Reading

Standard Name	LOD (mg/kg)	Rf of the Standard
1. Cypermethrin	0.3	0.84 , 0.89
2. Permethrin	0.3	0.87
3. Deltamethrin	0.2	0.90
4. Endrin	0.08	0.86
5. Endosulfan	0.04	0.13 , 0.88
6. DDT	0.04	0.90

Precaution and Storage

1. Should test under well-ventilated and far from heat or flash sources area.
2. Every chemical are hazardous. Direct inhalation or skin contact should be avoided.
3. Used solution, if contact with hands, wash immediately with water or if contact with eyes, irrigate with water and consult physician immediately.
4. Place the kit out of reach of children and keep in well-ventilated storage.



Two Groups of Pesticide Test Kit in Vegetables, Fruits and Whole Grains



Organochlorine and Pyrethroid Groups



Accessories Equipment Set



Water Bath System

G9 CO., LTD

www.asianmedic.com

It is a test method for organochlorine and pyrethroid pesticides in vegetables, fruits and whole grains.

Principle

It uses TLC separation principle and test by chemical reactions and expose to UV with wavelength of 254 nm to create colour. If there is organochlorine and pyrethroid pesticide, grey, brown-black spots on the TLC sheet will occur.

Chemical Solutions

- | | |
|---------------|----------|
| 1. Extraction | 1 bottle |
| 2. GPO-TM 4 | 1 bottle |
| 3. GPO-TM 5 | 1 bottle |
| 4. GPO-TM 5.1 | 1 bottle |

Apparatus inside the Box

- | | |
|-------------------------|------------|
| 1. TLC Aluminum Sheet | 1 set |
| 2. Capillary Tube | 1 set |
| 3. 3 mm plastic dropper | 3 droppers |
| 4. 1 mm plastic dropper | 1 dropper |
| 5. Test kit manual | 1 set |

Additional apparatus

- Temperature adjustable water bath at 48 ± 2 °C includes sieve.
- UV Box (UV 254 nm) Water Bath System
- TLC Tank
- Metal cup
- Sample bottle and dropper
- Knife and chopping board for chopping the sample.
- Forcept
- Tray for placing TLC sheet
- Glove
- Timer

Test Solution Preparation

Draw 10 ml of GPO-TM 5 solution and 2 ml of GPO-TM 5.1 into the TLC Tank. Shake well and let it sits for at least 30 minutes before the test.

Test Procedure

1. Sample Preparation and Extraction



1.1 Chop vegetables and fruits thoroughly. Put them in the bottle of approximately 5 grams or 4 lines on the bottle.

In case of whole grains, use about 2.5 grams or 2 lines on the bottle. Label every sample bottle.

1.2 Use a dropper to draw 5 ml of the extraction in to the sample bottle. Shake sturdily for 1 minute and let it sit for 5 minutes.

2. Evaporation

Use the plastic dropper to draw 1 ml of the clear extraction in 1.2 into the metal cup which is placed on the sieve. Leave the sieve in the water bath at 48 ± 2 °C. Wait until the extraction in the metal is almost all evaporated or is about 2 drops left.



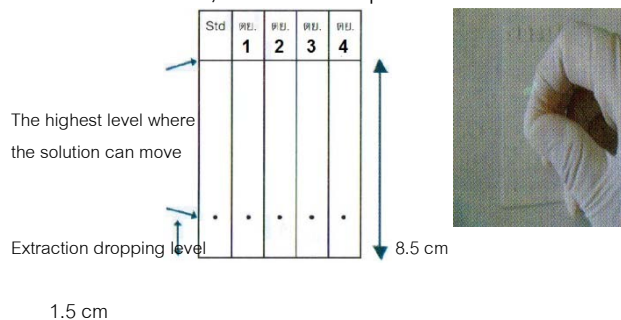
3. TLC Aluminum Sheet Preparation

3.1 Write the sample ID on the TLC aluminum sheet. Do not touch the TLC sheet directly with your hands. This will create grease on the sheet and interfere the test.

3.2 Use a pencil to mark a spot in the middle of each column. This is the spot to drop the extraction. It is 1.5 cm measured from the bottom of the sheet.

3.3 The highest level where the solution can move is 8.5 cm measured from the bottom of the sheet. Mark the level lightly with a pencil.

3.4 The remaining area from the marked level where the solution can move, write the sample and standard ID.



4. Test

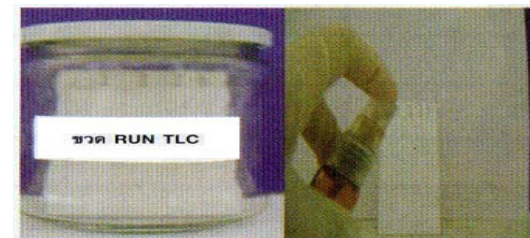
4.1 Use the capillary tube to draw the sample extraction in 2 (if the solution in the metal cup are dried, drop 2 drops of the extraction into the cup. Tilt the metal cup gently to dissolve all the dried extraction inside the cup.). Drop all the extraction by touching the tip of the capillary tube to the marked extraction dropping spot on the TLC aluminum sheet. Raise the capillary tube up and wait until the dropped extraction dried. Repeat about 4-6 times until the extraction runs out.

4.2 Take TLC aluminum sheet and dip in to the TLC tank. Lean it to the side of the bottle and close the lid (Do not shake or move the bottle).

4.3 When the solution moves to the specified level, open the lid and use the forcept to grip the TLC aluminum sheet. Place it on the side of the bottle and let it dry.

5. Color Test

5.1 Spray the TLC aluminum sheet with GPO-TM 4 with the distance of 4.5 inches until it soaks. Let it dry (1 minute).



5.2 Expose the TLC aluminum sheet with UV at the wavelength of 254 nm for 3-5 minutes (if expose too long, the sheet will burn). If there is organochlorine and pyrethroid pesticides, it will turn grey, brown-black. Read the colour comparing result and Rf of the standard pesticide.