

## Pyrethroid pesticides

Synthetic pyrethroid insecticides are a group of pesticide that can be used legally in crop production as well as organophosphate and carbamate groups. Pyrethroids are less toxic to warm blood animal than the other groups, but very toxic to bees and other useful insects. Nowadays, pyrethroid groups are widely used in many crop production, therefore it is necessary to use a rapid screening test for food safety.

### Testing pyrethroid residues by PY– Test Kit

Detection Limit : For cypermetrin

Samples : Peppers , chili = 0.8 mg./kg.

: Other vegetables and fruits = 0.4 mg./kg

### Target Sample

VEGETABLES, FRUITS

### Test of synthetic pyrethroids

cypermethrin, cyfluthrin, cyhalothrin, deltamethrin, esfenvalerate , fenpropathrin, fenvalerate

## Equipment and reagents

### Equipment & Glassware :

- Vortex mixer , water bath at 35-40 °C, autopipette 100-1000 ul. , timer , rack , test tube , Pasteur pipette, forceps , glass funnel (size 3.5 -4.5 cm.)

### PY - Reagents :

Extract – 1 , Blank solution , PY-1, PY-2,

PY-3, PY-4, PY-5, PY– 6, cotton wool

## Extraction procedure



✦ Sampling and weigh 20g. of sample except 10 g. for pepper, chili.

✦ Pipette 1 ml. of Extract-1 in to a test tube



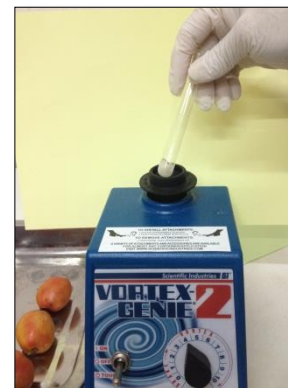
✦ Roll a cotton wool in cycle diameter about 1 cm. and put in a glass funnel, which supported by 1 ml. Extract-1 test tube , then pipette ~ 0.25 ml.



of Extract-1 from the tube in to the cotton wool or only for wetting.

✦ Catch the wet cotton wool by a forceps and swab on the outer part of the sample until the sample left

✦ Put the swab cotton wool (already swab the outer part of sample) in to the original tube, then shake with Vortex



✦ Catch the wool from the tube and put on the glass funnel.

✦ Squeeze the wool until drying. Then leave the wool and take the glass funnel off.

✦ Shake the sample extract homogeneously and bring to test for PY –residues with PY –Reagent Kit.



## TESTING PROCEDURE

by PY – test kit follow the table below:

Reagent added	BLANK TUBE	SAMPLE TUBE	operating
Blank solution	250 Microliter	-	-
Sample Extract	-	250 Microliter	-
PY-1	250 Microliter	250 Microliter	Shake *

\* Shaking the samples on the Vortex and then placing them in the warm water bath at 37°C (or 35 - 40°C) for 10 minutes , take them out of the water bath; follow the procedure in the table below.

PY-2	750 Microliter	750 Microliter	Shake
PY-3	150 Microliter	150 Microliter	Shake
PY-4	250 Microliter	250 Microliter	Shake
PY-5	500 Microliter	500 Microliter	Shake
PY-6	500 Microliter	500 Microliter	Shake *

If no autopipette, can use plastic pipette,

250 ul. = 0.25 ml. / 1 part ,

500 ul. = 0.50 ml. / 2 part ,

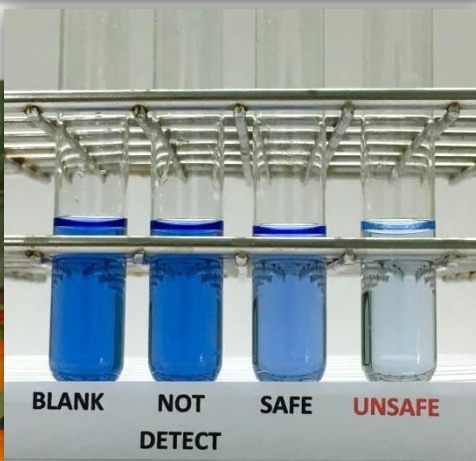
750 ul. = 0.75 ml. / 3 part, and

150 ul. = 3 drop

Reading the results :

Comparison of the colors appear in the blank and in the sample tubes.

## EVALUATION THE RESULT



COLOR IN THE TUBE	RESULT
✦ sample tube $\geq$ BLANK	Not detected
✦ sample tube $<$ BLANK	Detected , Safe
✦ No color - pale color in sample tube	Detected , Unsafe

### CAUTION

- Should wear gloves during analysis
- The Extract-1 is toxic for human health, avoid breathing and leave it evaporated in the ventilated place or hood.
- When the chemical reagents contact your skin, quickly wash with the clean water .
- After using the PY – Reagents, cap the bottles immediately.

### STORAGE OF PY - REAGENTS

- ✦ Keep a set of PY –Reagents at below 30°C, can be used not less than 6 months.



# PYRETHROID RESIDUAL TEST KIT