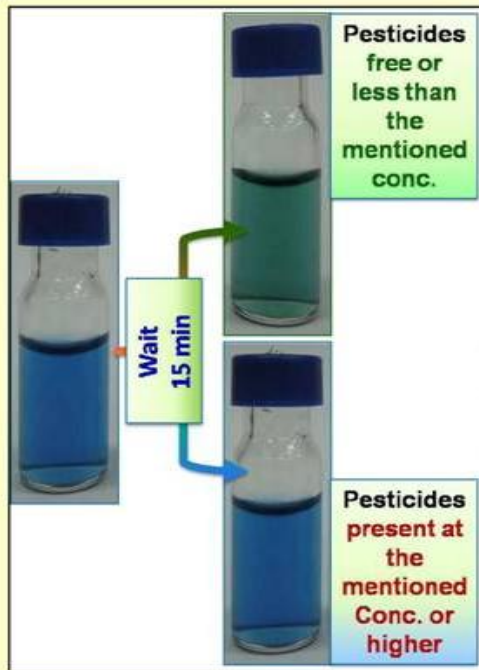


(Tech. Code. AB37NABTD)

Biokit for detection of pesticides (organophosphate and organocarbamate groups)



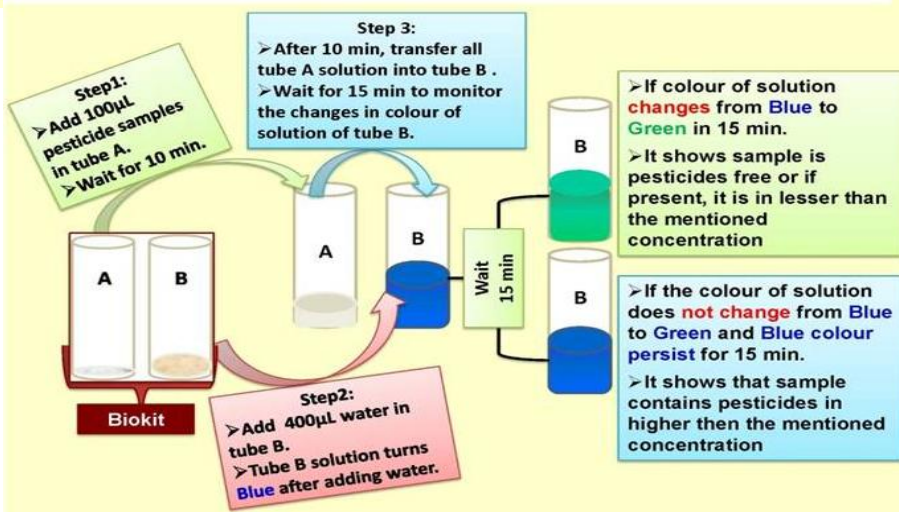
BioKit testing 12 pesticides (OP and OC groups):

Organophosphate (OP)	Conc. (ppm) Where no colour changes	Organocarbamate (OC)	Conc. (ppm) Where no colour changes
Dichlorvos	0.2	Carbaryl	0.05
Methyl Parathion	1.0	Carbofuran	0.01
Monocrotophos	1.0	Carbosulfan	0.01
Chlorpyrifos	2.0	Aldicarb	0.05
Phorate	2.0		
Profenofos	1.0		
Parathion	0.005		
Quinalphos	0.01		

➤ This is **colorimetric qualitative biosensor** for detecting 12 pesticides

➤ There is colour code (**Blue** and **Green**) which indicate the **presence** and **absence** of pesticides

➤ This is one of the unique kit developed across India to detect multiple pesticides.



Step 1:
➤ Add 100µL pesticide samples in tube A.
➤ Wait for 10 min.

Step 2:
➤ Add 400µL water in tube B.
➤ Tube B solution turns Blue after adding water.

Step 3:
➤ After 10 min, transfer all tube A solution into tube B.
➤ Wait for 15 min to monitor the changes in colour of solution of tube B.

Wait 15 min

➤ If colour of solution **changes** from Blue to Green in 15 min.
➤ It shows sample is pesticides free or if present, it is in lesser than the mentioned concentration

➤ If the colour of solution does **not change** from Blue to Green and Blue colour persist for 15 min.
➤ It shows that sample contains pesticides in higher than the mentioned concentration

➤ This Biokit has been recognized as a **Rapid Food Testing Kit** by FSSAI in their press release on 31st Dec. 2019

➤ https://fssai.gov.in/upload/press_release/2019/12/5e0aef7e1cb3ePress_Release_Rapid_Kits_31_12_2019.pdf

➤ This technology has been transferred to one Licensee, **HARVESTO, W.S. TELEMATICS PVT. LTD.** New Delhi.

➤ Cost of sample analysis: **Rs. 100/each**

Biokit for detection of pesticides (organophosphate and organocarbamate groups)

NABTD has developed a technology (Tech. Code: **AB37NABTD, 2019**) “**BioKit for detection of group of Organophosphate (OP) and Organocarbamate (OC) pesticides**” for qualitative detection of presence of pesticides in food commodities such as vegetables and fruits. Biokit is able to detect 12 pesticides that belong to organophosphate and organocarbamate groups if present in higher than the prescribed concentrations (Table 1).

In this Biokit, a colour code, blue and green was optimized (Figure 1). If pesticides are either absent or present in safe/prescribed concentration, the colour will change from blue to green. If pesticides are present in higher than the prescribed concentrations then there will be no change in colour and blue colour will persist (Figure 2. Schematic diagram).

Application: It can be used for analysis of organic vegetables and fruits as well as analysis of bulk purchase of farm produce.

Technology transferred to Entrepreneur: Technology was transferred to Harvesto (Harvesto.in), W.S. Telematics Private Limited, New Delhi.

Recognition: Biokit has been recognized as a **Rapid Food Testing Kit** by **Food Safety and Standard Authority of India (FSSAI)** in their press release (31/12/2019).

https://fssai.gov.in/upload/press_release/2019/12/5e0aef7e1cb3ePress_Release_Rapid_Kits_31_12_2019.pdf