

## **Solution to Reduce Wastage of Pesticides**

### **Why in news?**

\n\n

CSIR has found a lipid compound to reduce the wastage of pesticides by slippage.

\n\n

### **What is CSIR?**

\n\n

\n

- The Council of Scientific & Industrial Research (CSIR) is India's contemporary R&D organization.

\n

- It is known for its cutting edge R&D knowledgebase in diverse S&T areas.

\n

- CSIR's R&D expertise and experience is embodied in about 4600 active scientists supported by about 8000 scientific and technical personnel.

\n

- It provides significant technological intervention in many areas with regard to societal efforts which include environment, health, drinking water, food, housing, energy, Farm and non-farm sectors.

\n

\n\n

### **How CSIR's recent innovation will reduce pesticide wastage?**

\n\n

\n

- The CSIR has identified a lipid compound known as Glycerol-Mono-Oleate (GMO), a natural wax-like solid extracted from sunflower oil.

\n

- The structure of this compound is that it's one end is hydrophilic (water-attracting) and the other end is hydrophobic (water-repelling).

\n

- When this compound is mixed with pesticides, the liquid sticks to the leaves and doesn't fall off to the ground.

\n

- When the solution was sprayed the lipid GMO nanoparticles rush to the leaf surface and quickly spread out to make a thin film on the leaves.  
\n
- This thin film is hydrophilic on the outside and hydrophobic on the inside resulting in the water-pesticide mix sticking strongly on the leaves.  
\n

\n\n

### **What is the significance of this innovation?**

\n\n

- The pesticides are sprayed on to the crops which increases its slippage into the ground.  
\n
- This residue of pesticides then leeches to the ground, mixes with the water cycle and the food chain which has long term consequences for man.  
\n
- From economical point, large of amount of pesticides have to be sprayed to keep the plants away from insects and pests.  
\n
- Since, the pesticides don't stick to the leaf, farmers locally mix pesticides with soap water which is not a viable solution.  
\n
- This forced the scientists to work on finding a solution for this small yet significant problem and found an innovative solution which is safe for the whole ecosystem.  
\n

\n\n

\n\n

**Source: The Indian Express**

\n\n

\n