

# SAFETY ELIMINATION OF SOME PESTICIDES RESIDUES

## Abstract

Soybean crop (*Glycine max* L) is a very important economic crop belongs to leguminosae and considered one of the high potentially protein source. In Egypt soybean plants usually attacked by many insect pests such as spider mites, aphids, cotton leaf worm, green bean fly and various caterpillars. Cotton leaf worm *Spodoptera littoralis* (Boisd) considered the major pest thought-out the growing season causing reduction in productively. Therefore, this study aimed to evaluate the insecticidal activity of methomyl, chlorpyrifos and diazinon insecticides against the cotton leaf worm *S. littoralis* on soybean genotype, Giza 21, to investigate the behavior of these insecticides in soybean after application, to study the stability of those tested insecticides under some of the environmental factors such as exposure to the direct sunlight, short UV-rays and different temperature degrees, and finally the efficiency of some commercial processing on the removal of methomyl, chlorpyrifos and diazinon residues from soybean seeds were evaluated.

The results showed that chlorpyrifos was the most effective insecticides against cotton leaf worm. Diazinon was the lowest persistence insecticide on and in soybean leaves and pods, while the highest residues values were methomyl and diazinon on and in seeds. In mature seeds were not detected at moreover harvest day. The environmental factors such as exposure to the direct sunlight, short UV-rays and different temperature degrees significantly reduced levels of the tested insecticides, influence of exposure to direct sunlight, the highest loss were diazinon and methomyl then chlorpyrifos insecticide. While influence of exposure to UV-rays, the highest loss were methomyl followed by diazinon then chlorpyrifos insecticide. Also, the result showed that the loss rate values increased by increasing, the degrees of temperature significantly the degree 45°C was higher than degree 35°C in the effect of the insecticides. The results showed that the food processing is an important process in minimizing insecticides residues in the final products, the removal percentage values were significantly, whereas, cooking procedures were the highest effect than dry heating at (90-95°C) on removal of all tested insecticides from soybean seeds

# التخلص الآمن من مخلفات مبيدات الآفات

## الملخص

يعتبر فول الصويا من المحاصيل البقولية الاقتصادية فى مصر و الغنى بالبروتين. غالبا ما يهاجم فول الصويا بالعديد من الافات مثل العنكبوت الاحمر و المن و دودة ورق القطن و تعتبر دودة ورق القطن هى اكثر الافات اهمية نظرا لما تسببه من خفض انتاجية الفدان لذلك:-

تم اجراء هذه الدراسة بهدف تقييم الكفاءة الابادية لمبيدات الميثوميل (يتبع مجموعة مركبات الكربامات) و الكلوربيروفوس ايثيل والديازينون (يتبع مجموعة مركبات الفوسفور العضوية) تجاه يرقات دودة ورق القطن على نبات فول الصويا صنف جيزة 21. ودراسة سلوك هذه المبيدات بعد تطبيقها على اوراق و قرون و بذور فول الصويا. كما تم دراسة تأثير بعض العوامل البيئية مثل التعريض لاشعة الشمس المباشرة , الاشعة فوق البنفسجية و درجات الحرارة المختلفة على معدل تكسير المادة الفعالة لهذه المبيدات و اخيرا تم تقييم مدى كفاءة بعض طرق التصنيع المختلفة التى تجرى لبذور فول الصويا بهدف التخلص الامن من مخلفات مبيدات الافات المتبقية فى البذور.

اوضحت النتائج ان مبيد الكلوربيروفوس ايثيل اكثر المبيدات تأثيرا على يرقات دودة ورق القطن. مبيد الديازينون كان اقل المبيدات ثباتا على الاوراق و القرون بينما كان الميثوميل و الديازينون اكثر وجودا فى البذور. بينما البذور الناضجة (يوم الحصاد) كانت خالية من اى مبيدات. كان للعوامل البيئية المختبرة مثل ( التعرض لضوء الشمس , الاشعة فوق البنفسجية و درجات الحرارة المختلفة تأثير معنى على كل المبيدات المختبرة. كان الديازينون اكثر المبيدات تاثرا باشعة الشمس المباشرة بينما كان الميثوميل اكثر المبيدات تاثرا بالاشعة فوق البنفسجية. كما اوضحت النتائج ان تأثير درجة الحرارة 45° م اعلى من تأثير درجة الحرارة 35° م على كل المبيدات المختبرة.

كما كان لعمليات لمراحل التصنيع دور معنى فى التخلص من المتبقيات الموجودة فى البذور المعاملة. حيث كان تأثير عمليات الطبخ اعلى من التسخين الجاف للبذور فى ازالة المبيدات الحشرية المختبرة.

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