بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

THE USE OF CHEMIGATION TECHNIQUES FOR MINIMIZING AGRO-CHEMICAL POLLUTION

By
AHMED ABDEL- ATY HUSSIEN MOHAMED
B.Sc. Agric. (Agricultural mechanization), Faculty of Agriculture,
Ain-Shams University (1982)

A Thesis Submitted in Partial Fulfillment
of
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Abstract

Ahmed Abdel-Aty Hussein, studies on " The Use of Chemigation Techniques for Minimizing Agro-Chemical Pollution" Unpublished Master of Science, Ain Shams University, Institute of Environmental Studies and Research (2001).

The experiment was conducted for sunflower crop (Vedoc) in Nobaria area, which represent sandy soil condition to study the effect of fungigation on reducing thiophanate-methyl (Topsin- M) pollution in the soil (1 hr after application, 5,9,14 days after application) and sunflower seeds after harvesting. Three rates of thiophanate-methyl (1/2, 3/4and1Kg/fed) were selected for surface and subsurface drip irrigation systems 30,50 cm drippers, spacing as a protecting dose after one month of planting.

This designed treatments aimed to study and throw light on the following:

1-Effect of irrigation systems on the productivity of sunflower under fungicide treatment.

2-Water use efficiency of drip irrigation systems in relation to fungicide treatment with three levels of thiophanate-methyl fungicide.

3-Residues of thiophanate-methyl in soil and seeds sunflower cultivated under fungigation system.

4-Economic feasibility.

The obtained results could be summarized in the followings:

1- A significant increase in sunflower seed yield under surface drip irrigation at 50 cm drippers, spacing was recorded (1045.8 Kg/fed) with 1/2 rate of thiophanate-methyl compared with the other treatments. Also, subsurface drip irrigation system at 50 cm drippers, spacing and 20 cm depth achieved the total yield of (1044.3 Kg / fed) with the same rate of thiophanate-methyl.

2- A superior performance of surface drip irrigation systems 50 cm drippers, spacing in achieving high yield of sunflower in soil was obtained.

3- A considerable increase in water use efficiency (WUE) 0.331 Kg/m^3 occurred with the surface drip irrigation systems combination at 50 cm drippers, spacing and 1/2 rate of thiophanate-methyl fungicide. A less efficiency was recorded with same system and subsurface system at different drippers, spacing and higher rates of thiophanate-methyl. The same trend of results was obtained with subsurface 50-cm drippers, spacing (0.330 Kg/m^3) at 1/2 Kg/fed of thiophanate-methyl.

4- The obtained results indicate no-detected residues of thiophanate-methyl in soil when used in low rate (1/2 Kg/fed). This was pronounced with both surface and subsurface drip irrigation systems at 30,50 cm drippers spacing, after 1 hour from application and 5,9 and14 days from application also. Such finding indicate the satisfactory performance of fungigation approach in achieving proposed objectives without problem relating to fungicide residues in soil.

5- No-detected residues were found in sunflower seeds after harvesting from thiophanate-methyl treatments.

6- The better values of sunflower production can be obtained by using 50% of the fungicide rate surface drip irrigation 50 cm drippers, spacing.