

## ABSTRACT

The extensive use of pesticides is coincided with an increase of its residue effect on environmental elements such as water, soil, crops, food products, animal and humans. So, this study aimed to investigate the persistence of Clodinafop-propargyl, Isoproturon and Diclofop-methyl when mixed with nitrogen fertilizer in soil planted with wheat plants. Also, the effects of different storage temperature on the stability of chemical and physical properties of the tested herbicides under field conditions and according to FAO specifications were studied.

The results of the present work can be summarized as follows:

- 1- Degradation of clodinafop-propargyl when mixed with N-fertilizer was occurred faster in field. After 120 days of treatment the residues of this herbicide when used at the recommended rate and mixed with nitrogen fertilizer at 75, 40 and 40 kg/Fed were not detected in wheat plants.
- 2- The residues of isoproturon and diclofop-methyl when mixed with-N fertilizers were not detected in soil and in wheat plants after 150 days from application.
- 3- The active ingredient % of each of the studied herbicides was affected by storage temperature degree and long storage periods for 360 days in sunny and in dark places.
- 4- Diclofop-methyl was more stable when exposed to direct sunlight and in dark place at room temperature when stored for 360 days.
- 5- pH of clodinafop-propargyl and diclofop-methyl were also affected by storage temperature and duration of exposure period when were stored in sunny and in dark places for 360 days.
- 6-The suspensibility % tests emulsion stability and re-emulsification test for the two tested pesticides formulations were passed successfully in sunny and dark places after 360 days from storage.

7-The wet sieve test and the wetting of clodinafop-propargyl formulation without stirring during storage were passed successfully through 360 days storage in direct sunlight and in dark places.

8-Clodinafop-propargyl, isoproturon and diclofop-methyl formulation were failed through steady foam test at the experimental conditions for 360 days storage.

9-The active ingredient % of clodinafop-propargyl and Isoproturon were influenced by temperature and period of exposure when stored at 54°C for 14 days. While, diclofop- methyl herbicide was more stable under the same storage conditions.

10-pH values were gradually decreased by storage when clodinafop propargyl and isoproturon formulations stored for 14 days at 54 °C. Also, pH range for diclofop-methyl herbicide was more stable through the same storage conditions.

11-The suspensibility test of the two studied herbicides was passed successfully through when stored for 14 days at 54 °C

12-The emulsion stability and re-emulsification of diclofop-methyl formation and when mixed with N-fertilizer were not affected with storage at elevated temperature or at low heat degrees at zero °C and 54 °C for 7 and 14 days.

13-The formulated clodinafop-propargyl herbicide was completely wetted within one minute without swirling before one day of storage for 14 days storage at 54 °C.

14-The spontaneity of dispersion % of isoproturon herbicide was not affected by period of storage and passed successfully through storage for 14 days at 54 °C.

15-Physical properties of the three tested herbicide formulations were passed successfully when mixed with nitrogen fertilizer at the recommended rates under storage for 14 days at 54 °C.

## المستخلص

استهدفت الدراسة القاء الضوء على التوافق الخلطى بين بعض المبيدات العشبية والاسمدة النتروجينية وكذلك اجراء تجارب معملية وميدانية لإلقاء الضوء على التأثيرات الجانبية الضارة لهذه الخلائط على مواصفات التربة الطبيعية والكيميائية ونمو وتطور نبات القمح والانتاجية المحصولية وجودة الحبوب الناتجة ومدى تواجد مخلفات المبيدات فيها وحساب أقتصاديات استخدام هذه المنظومة المتكاملة مقارنة بالزراعات والمعاملات التقليدية. وايضا دراسة بعض العوامل التى تؤثر على ثبات مبيدات كلودينا فوب-بروجيل (توبيك 15% مسحوق قابل للبلل) ايزوبرتيرون (تيورنكس 50% مركز معلق) داىكلوفوب-مثيل (ايلوكسان 36% مركز قابل للاستحلاب) فى حقول القمح ومعدلات الامتصاص عندما استخدمت منفردة ومخلوطة بالسماذ النتروجينى مثل التخزين تحت الظروف المصرية لمدة 360 يوم فى الضوء المستمر والظلام المستمر وكذلك التخزين تبعا لمواصفات تقدير الثبات الموضوعه بواسطة منظمة الاغذية والزراعة **FAO** لسنة 2008 على درجة حرارة 54 درجة مئوية لمدة 14 يوم وكذلك على درجة الصفر المئوى لمدة سبعة ايام.

اظهرت النتائج انهيار المادة الفعالة للمبيدات الموصى بها منفردة ومخلوطة بالسماذ النتروجينى. كذلك تحسن الخواص الطبيعية والكيميائية للمبيدات المختبرة أدى زيادة معدل التسميد النتروجينى الى حدوث زيادة معنوية فى الانتاجية المحصولية للقمح فى التربة التى عوملت بنصف معدل المبيد الموصى به.

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