

Dedication

To the soul of my father

To my mother

To my wife

To my brothers

To my sisters and my friends

Acknowledgments

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Abstract

A field experiment was carried out to study the effect of two pesticides (Folimat and Icaros) on growth of radish plant and on agricultural soil. The experiment was conducted during November 2014- January 2015 at the Farm of the College of Agricultural Studies Shambat.

Complete randomized design with three replicates was used in this material experiment. Three treatments were used for each of the two pesticides via control, recommended dose (1.92kg/ha) and 50% higher than the excessive dose (2.88kg/ha) for Folimat, but for Icaros 249.2 ml/ha (recommended dose) and 371.8 ml/ha (excessive dose) in addition to control to evaluate their effect on plant and soil.

The measurements were taken on leaf area, root length, fresh weight and dry weight of radish plant. Soil samples were collected before sowing at depth 0- 30cm for analysis. Chemical measurements are total nitrogen %, phosphorus ppm, pH, ECe ds/m, soluble cations (Ca, Mg, Na, K) mg/L and soluble anions (CO_3 , HCO_3 , Cl, CaCO_3) mg/L. The two pesticides applied one month after planting.

The result showed that both chemicals affected positively radish growth at the recommended dose, but negatively at the excessive dose. Both pesticides reduced the measured soil characteristics.

ملخص الدراسة

أجريت تجربة حقلية لدراسة أثر إثنين من المبيدات الحشرية (فوليمات و اكاروس) على نمو نبات الفجل والتربة الزراعية. أجريت التجربة خلال الفترة من نوفمبر 2014 - يناير 2015 . بمزرعة جامعة السودان للعلوم والتكنولوجيا- كلية الدراسات الزراعية – شمبات .

إستخدم التصميم كامل العشوائية بعدد ثلاث مكررات لإجراء التجربة. إستخدمت ثلاث معاملات لكل من المبيدات وهى المعاملة السائدة ، الجرعة الموصى بها من مبيد الفوليمات (1.92kg/ha) و ٥٠% أعلى من الجرعة الموصى بها (2.88kg/ha). بالنسبة لمبيد اكاروس كانت الجرعة الموصى بها (249.2 ml/ha) و ٥٠% أعلى من الجرعة الموصى بها و (371.8 ml/ha) من الجرعة الإضافية.

تم أخذ القياسات لكل من مساحة الورقة، طول الجذور، الوزن الرطب والوزن الجاف لنبات الفجل. تم جمع عينات التربة قبل الزراعة من عمق يتراوح من ٠ - ٣٠ سم للتحليل. القياسات الكيميائية التي تمت هى نسبة النيتروجين الكلي، الفسفور (ppm)، التوصيل الكهربائي (ds/m)، الكيتونات الذائبة (Ca, Mg, Na, K) mg/L والأيونات الذائبة (CO₃, HCO₃, Cl, CaCO₃) mg/L. تمت إضافة المبيدين خلال شهر واحد بعد الزراعة.

أظهرت النتائج أن للمبيدين آثار إيجابية لنمو نبات الفجل عند الجرعة الموصى بها ونتائج سلبية عند الجرعة الزائدة، كما أظهرت النتائج أن المبيدين خفضا خصائص التربة المقاسة.