Abstract

Composting of some plant residues was studied microbiologically and chemically besides its effects on the yield of wheat grown in recent sandy soil conditions. The aim of this study was acheived through: Investigation of compost physico-Chemical conditions, the role of microbial succession and enzyme activity of the successive common microbial species (cellulase , protease and dehydrogenase). The results, showed the increase of PH, EC, bulk density and total nitrogen values whereas, the values of (O.C), (O.M) and C/N ratio were decreased. At the beginning and at the end of composting process the populations of mesophilic organisms increased while at the period of 20 – 40 days there was markedly increase of thermophilic organisms. Addation of compost as well as biofertilizers significally enhanced the growth and productivety of wheat and that indicated the positive effect of organic matter and biofertilization in organic farming.

الموجز العربى

تم عمل دراسة ميكروبيولوجية وكيميائية على الكمبوست الناتج من بعض المخلفات النباتية وأثر إستخدام هذا الكمبوست على إنتاجية محصول القمح تحت ظروف أراضى رملية حديثة الاستصلاح وتم تحقيق الهدف من الدراسة وهى عزل وتعريف الأنواع الميكروبية الشائعة فى الكمبوست وكذلك دراسة الظروف الكيميائية والطبيعية وإظهار دور التعاقب الميكروبى والنشاط الإنزيمى وخاصة إنزيمات السيليوليز والبروتياز والدهيدروجينيز واظهرت النتائج تزايد قيمة الـ *PH* حتى التعادل نهاية الكمر وزادت قيم كل من التوصيل الكهربي والكثافة الظاهرية ، أنخفاض قيمة الكربون العضوى والمادة العضوية وكذلك نسبة **C/N** وزيادة النيتروجين الكلي . زيادة الاعداد الميزوفيلية في بداية عملية الكمر وفي نهاية العملية وزيادة الأنواع الثرموفيلية في الفترة من ٢٠ – ٤٠ يوم ومن خلال تجربة حقلية أدى إضافة الكمبوست والتسميد الحيوي إلى تشجيع نمو وإنتاجية محصول القمح مما يعكس الأثر الإيجابي للتسميد العضوى والحيوى في التطبيقات الزراعية .

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