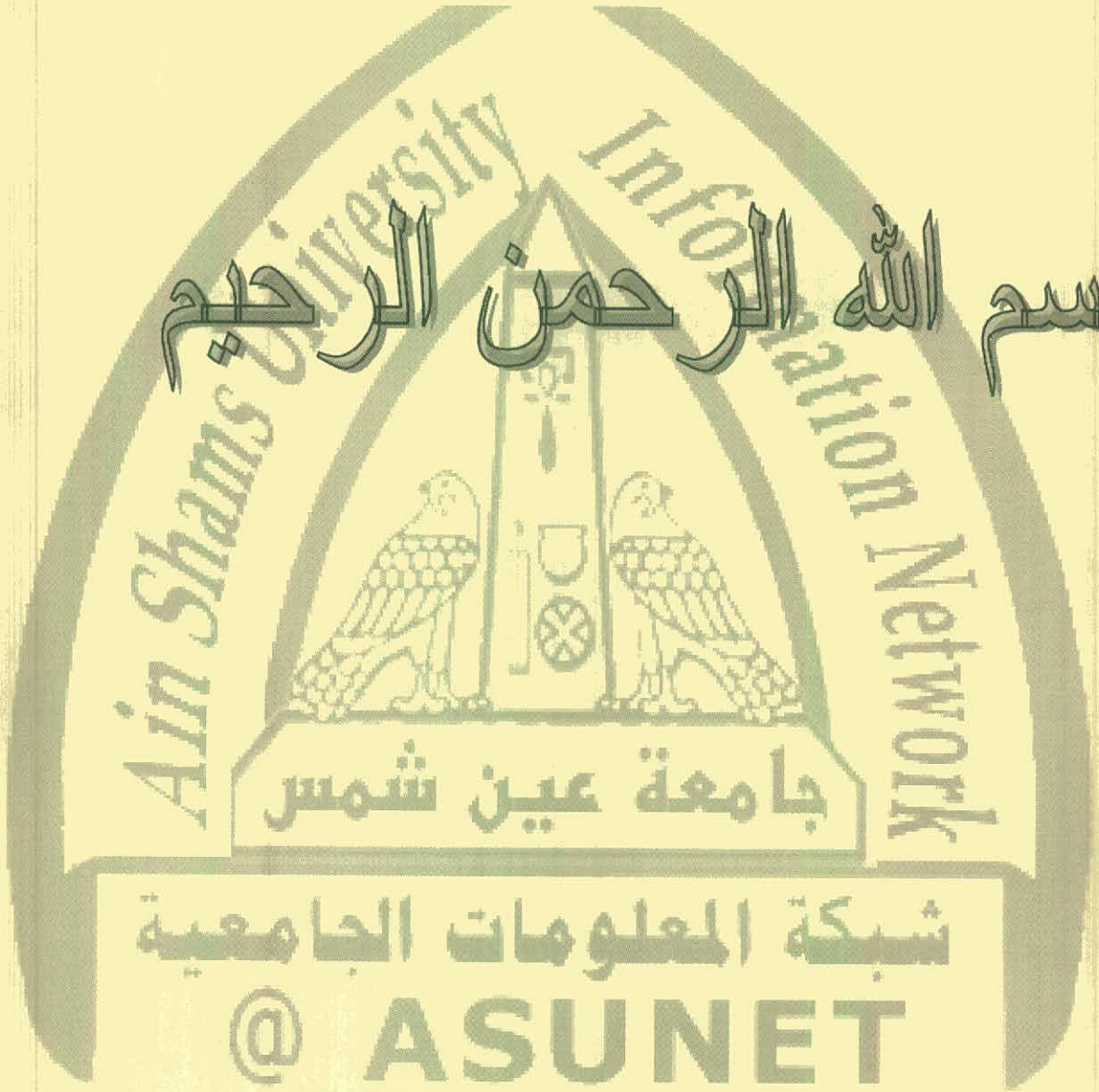

شبكة المعلومات الجامعية




# بسم الله الرحمن الرحيم


# شبكة المعلومات الجامعية

# التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

## يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

**To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%**

# بعض الوثائـــــــق الاصليـــــة تالفـــة

# بالرسالة صفحات لم ترد بالاصل

# EFFECT OF PHOSPHORUS FERTILIZATION ON YIELD AND YIELD ATTRIBUTES OF MUNG BEAN UNDER DIFFERENT IRRIGATION SYSTEMS



BY

**Haiam Anwar Sorour**
B. Sc. Agric., (Agronomy) , Ain Shams Univ., 1996

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the Requirement for the Degree of
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Faculty of Agriculture
Ain Shams University

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# APPROVAL SHEET

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# ABSTRCT

**Haiam Anwar Sorour. Effect of phosphorus fertilization on yield and yield attributes of mung been under different irrigation systems.Unpublished Master of Science Thesis, Agronomy Department, Fac. of Agric., Ain Shams University, 2000.**

A series of field trials were established in 1998 and 1999 growing summer seasons in the Agric. Res. Station of the Fac. of Agric .,Ain shams Univ. located at Shalakan, Kalubia Governorat, Egypt. Three field trials were performed in every growing season.The first, the second and the third trials were devoted to study, the response of mung bean (*Vigna radiata* (L.) Wilck.) cv. Kawmy-1 to the combination between three levels of $P_2O_5$ (15, 30 and 45 kg/fed.) and two amounts of water, i.e. 80% KC of soybean x ET ($Ir_1$) and 60% KC of soybean x ET ($Ir_2$) under sprinkler, drip or modified flooding irrigation systems

The amount of water added for $Ir_1$ and $Ir_2$ treatments was 1774.3 and 1330.5 $m^3$ per fed. In the first season and 1543.7 and 1157.8 $m^3$/fed, in the second season, respectively.

Plant height as well as number of branches, leaves and pods and their fresh and dry weight were considerably and consistently increased as the plant age increased from 45 to 75 days from planting.Growth parameters responded positively to $P_2O_5$ dose applied at 45, 60 and 75 days from planting, for example, in the first season, mung bean height amounted to 102.3, 106.6 and 111.2 cm at 45 days; 136.3, 144.9 and 151.2 cm at 60 days and 144.9, 157.6 and 163.9 cm at 75 days from planting, respectively , for plants supplied by 15, 30 and 45 kg $P_2O_5$/fed. The same trend was realized for the other growth traits recorded. Water regime, i.e. $Ir_1$ and $Ir_2$ reflected no significant effect on any of the growth traits

studied.Morover,non of the mung bean yield attributes was considerably affected by water regime applied ($Ir_1$ or $Ir_2$). Biomass, economic yield, seed index or harvest index revealed no significant response due to water regime treatments .Number of pods per plant, weight of pods per plant and seed weight per plant increased by increasing phosphatic fertilizer from 15 to 45 kg $P_2O_5$/fed., respectively. Biological and economic yields elucidated a consistent increase with increasing $P_2O_5$ added to mung bean. Seed index and harvest index followed the same trend of change.

The heaviest biomass yield was realized by adding 45 kg $P_2O_5$/fed. under flooding system being 8.01 and 8.90 t/fed. in the first and second seasons, respectively. On the contrary, reproductive growth of mung bean (yield of pods and yield of seeds) was enhanced considerably by adding 45 kg $P_2O_5$/fed. under sprinkler irrigation.Seed index (g/1000 seed) was significantly affected by the interaction between irrigation system and irrigation regime whereas the highest values were realized by growing mung bean plants under low amount of water ($Ir_2$) in both seasons under sprinkler irrigation system interaction effect of phosphatic fertilizer dose and water regime did not exert significant effect on yield of seed in the first season, whereas in the second one, highest yield was obtained by adding 45 kg $P_2O_5$/fed. and supplied by low amount of water ($Ir_2$, 1157.3$m^3$/fed.). Harvest index was not significantly affected. (water use efficiency) WUE amounted to 0.11, 0.13 and 0.15 kg seed /$m^3$ water in the first season and 0.17, 0.19 and 0.24 kg seed/$m^3$ water in the second season for plants supplied by15, 30 and 45 kg $P_2O_5$/fed., respectively. PUE followed similar response to $P_2O_5$ dose.as that of WUE.

**Key words**:
Mung bean, growth, $P_2O_5$ dose, irrigation regime,irrigation system ,interaction, Biological , seed yield ,WUE, PUE.

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