



**EFFECT OF SALICYLIC ACID AND FOLIAR
SPRAYING WITH SOME MICROELEMENTS ON
FRESH AND SEED YIELD OF PEA (*Pisium sativum L*)
SOME CULTIVARS.**

By

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5. SUMMARY

Abstract

The present study was carried out during the two studied winter seasons of 2015/2016 and 2016/2017 at the Experimental Farm at Shandaweel Agriculture Research Station, Sohag Governorate, Egypt, to study the effect of salicylic acid and foliar spraying with some microelements on fresh and dry seed yield of pea (*Pisium sativum* L.) some cultivars.

The results can be summarized as follow:-

5.1. Effect of pea cultivars on growth, yield and seed production of pea:

1. Pea cultivars significantly affected on most studied characters:
2. Palmoral cultivars achieved the best results for stem height (cm), fresh pod width (cm), fresh pod weight per plant (g), fresh pod yields (ton/fed.), dry seed weights per plant (g) and dry seed yield (kg/fed.) in the first and second seasons.
3. Jaguar cultivars recorded the highest values for number of branches per plant, number of fresh pods per plant and 100-dry seeds weight (g) in the two experimental seasons.
4. Master B cultivars gave the best results for highest fresh pod length (cm) and number of fresh seeds per fresh pod in both seasons.

5.2. Effect of microelements concentrations on growth, yield and seed production of pea:

1. microelements concentrations significantly affected on most studied characters:

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2. 150 ppm of microelements concentration had the best results for stem height (cm), number of branches per plant, fresh pod length (cm), fresh pod width (cm), number of fresh pods per plant, number of fresh seeds per fresh pod, fresh pod weight per plant (g), fresh pod yield (ton/fed.), dry seed weights per plant (g), dry seed yield (kg/fed.) and 100-dry seeds weight (g).

5.3. Effect of salicylic acid concentrations on growth, yield and seed production of pea:

1. salicylic acid concentrations significantly affected on most studied characters:
2. 300 ppm of salicylic acid concentration gave the highest values for stem height (cm), number of branches per plant, fresh pod length (cm), fresh pod width (cm), number of fresh pods per plant, number of fresh seeds per fresh pod, fresh pod weight per plant (g), fresh pod yield (ton/fed.), dry seed weights per plant (g), dry seed yield (kg/fed.) and 100-dry seeds weight (g).

5.4. Effect of interaction between pea cultivars and microelements concentrations on growth, yield and seed production of pea:

1. Interaction between pea cultivars and microelements concentrations significantly affected on most studied characters:
2. The interaction between Palmoral cv. and 150 ppm of microelements concentration achieved the best results for stem height (cm), fresh pod width (cm), fresh pod weight per plant (g), fresh pod yield (ton/fed.), dry seed weights per plant (g) and dry seed yield (kg/fed.).

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3. The interaction between Jaguar cv. and 150 ppm of microelements concentration gave the highest values for number of branches per plant, number of fresh pod per plant and 100-dry seeds weight (g).
4. The interaction between Master B cv. and 150 ppm of microelements concentration had the best results for fresh pod length (cm) and number of fresh seeds per fresh pod.

5.5. Effect of interaction between pea cultivars and salicylic acid concentrations on growth, yield, and seed production of pea:

1. Interaction between pea cultivars and salicylic acid concentrations significantly affected on most studied characters:
2. The interaction between Palmoral cv. and 300 ppm of salicylic acid concentration recorded the highest values for stem height (cm), fresh pod width (cm), fresh pod weight per plant (g), fresh pod yield (ton/fed.), dry seed weights per plant (g) and dry seed yield (kg/fed.) in both seasons.
3. The interaction between Jaguar cv. and 300 ppm of salicylic acid concentration gave the best results for number of branches per plant, 100-dry seeds weight (g) in the two experimental seasons. Number of fresh pods per plant had the highest number by the interaction between Jaguar cv. and 300 ppm of salicylic acid concentration in the first season. Meanwhile, the best results in the second season were obtained by the interaction between Jaguar cv. and 150 ppm of salicylic acid.
4. The interaction between Master B cv. and 300 ppm of salicylic acid concentration had the highest values for fresh pod length (cm) in the first and second seasons. The highest values of number of fresh

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seeds/fresh pod of pea were recorded by the interaction between Master B cv. and 150 ppm in the first season. But, the highest values of number of fresh seeds/fresh pod in the second season were recorded by the interaction between Master B cv. and 300 ppm of salicylic acid.

5.6. Effect of interaction between microelements and salicylic acid concentrations on growth, yield, and seed production of pea:

1. Interaction between microelements and salicylic acid concentrations significantly affected on most studied characters:
2. The interaction between 150 ppm of microelements concentration and 300 ppm of salicylic acid concentration recorded the best results for stem height (cm), number of branches per plant, fresh pod length (cm), fresh pod width (cm), number of fresh pods per plant, number of fresh seeds/fresh pod, fresh pod weight per plant (g), fresh pod yield (ton/fed.), dry seed weights per plant (g), dry seed yield (kg/fed.) and 100-dry seeds weight (g) in the first and second studied seasons.

5.7. Effect of interactions among pea cultivars, microelements and salicylic acid concentrations on growth, yield, and seed production of pea:

1. Interaction among pea cultivars, microelements and salicylic acid concentrations significantly affected on most studied characters:
2. The interaction among Palmoral cv., 150 ppm of microelements concentration and 300 ppm of salicylic acid concentrations gave the highest values for stem height (cm), fresh pod width (cm), fresh pod yield (ton/fed.), dry seed weights per plant (g) and dry seed yield (kg/fed.) in the two experimental seasons. The highest fresh

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pod weight per plant (g) of pea was obtained by the interaction among Palmoral cv. 150 ppm of microelements and 300 ppm of salicylic acid concentrations in the first season. Meanwhile, the highest value in the second season was recorded by the interaction among Jaguar, 150 ppm of microelements and 300 ppm of salicylic acid.

3. The interaction among Jaguar cv., 150 ppm of microelements and 300 ppm of salicylic acid concentrations had the best results for number of branches per plant, number of fresh pods per plant and 100-dry seeds weight (g) in both seasons.
4. The interaction among Master B cv., 150 ppm of microelements and 300 ppm of salicylic acid concentrations gave the best results for fresh pod length (cm) and number of fresh seeds/fresh pod of pea in the first and second seasons.

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CONCLUSION:

On the light of the recorded results and under the same conditions of study. It could be concluded that the interaction among Palmoral cv., 150 ppm of microelements and 300 ppm of salicylic acid concentrations gave the highest production of fresh pod yield (ton/fed.) and dry seed yield (kg/fed.) of pea. Furthermore, the application of interaction among Jaguar cv., 150 ppm of microelements and 300 ppm of salicylic acid concentrations gave the highest number of fresh pods per plant. Also, the interaction among Master B cv., 150 ppm of microelements and 300 ppm of salicylic acid concentrations gave the tallest fresh pod (cm) and number of fresh seeds/fresh pod of pea in the two experimental seasons.

RECOMMENDATIONS:

It could be recommended that sowing Palmoral pea cultivar and spraying with 150 ppm of microelements as iron, zinc and manganese plus 300 ppm of salicylic acid concentration to obtain the highest fresh and dry seed yield of pea under the prevailed environmental conditions of the present study.