

Title Producing a high quality *Petunia* plants growing under different media
Author M. Abd El-Hady and S.T. Nermeen
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Abstract

Peatmoss plays an important role as pot media for growing the ornamental plants, but because its expensive costs, the economic orientation now is looking forward for an alternative media either mixed with peatmoss or separately used. In addition to using some organic and inorganic acids to enhancement the media properties for improving the growth characters of *Petunia* plants. Results of this study showed that, P/PS media treated by acetic or citric acids representing the highest values of all the studied characters. It means that increasing the amount of P or PS to a media hasn't any noticeable effect as when used the treated P/PS media. The highest values of fresh and dry weights (FW and DW), stem diameter and number of branches per plant were obtained when treated P/PS media by acetic acid. Meanwhile, the highest values of shoot and root lengths and the flower numbers were noticed with the same media but treated by citric acid. There were positively significant correlations between FW, DW, shoot and root lengths, stem diameter and number of branches per plant from one side and pH and easily available water (EAW) from the other and negatively with electrical conductivity (EC) of media mixes. Positive significant correlation coefficients were also observed between the total flower numbers and AW, pH and N and K contents. Contrary, the correlation was negative with EC and P content. This means that increase salts in solution of the media mixes P/PS has a bad effect on the total flowers of *Petunia* plants. In the investigated media mixes irrigated with acidified irrigation water, the growth characters of *Petunia* plants positively correlated with water content at field capacity (FC), wilting point (WP) and EAW, which reflected on the media ability to store water and its ability to supply *Petunia* plants by their water needs for metabolism activities.