Phenophase and Metweekwise PET estimation and AET measurement in soybean \([Glycine \text{ max (L.)]}\)

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**SUMMARY**

Soybean \([Glycine \text{ max (L.)]}\) is grown as rainfed crop. The acute need of water at critical growth stages, through lysimetric observations and its comparison with different approaches may provide information for decision making in irrigation scheduling the measurement of AET by means of lysimeter and it is essential to establish a relationship between the measured value of AET by in lysimeter and the estimated PET by different empirical formulae. It can be concluded from the field study that the modified penman method was found to be suitable and ideal for assessing the crop water requirements. The Blanney and criddle, Thornthwaite and pan evaporation methods do not give correct prediction of PET, due to estimated Kc values do not give correct estimation at various phenophases. For estimation of PET under Marathwada region at Parbhani condition the modified penman method is the most suitable having found theoretical formulation and more accuracy in estimation as compared with the Blaney and criddle, Thornthwaite and pan evaporation methods. The total seasonal Actual evapotranspiration (AET) for soybean is found to be 353.59 mm at Parbhani to be less than the seasonal water requirement for this crop. This again necessitates the application of protective irrigation to soybean during pod formation to grain formation stage by the modified penman method.


**Key words:**
Phenophase,
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