

ABSTRACT

Cassava roots provide a cheap source of dietary energy to millions of people in the tropics. Variations in yield, stomatal conductance, transpiration rate and water use efficiency occur due to various factors. This makes selection of clones with wide ecological adaptation and high yield difficult. The influence of crop age and agroecozones (AEZ) in Nigeria on above parameters were studied. The tested AEZs were Sudan savanna (Minjibir), Southern Guinea savanna (Mokwa) and forest-savanna transition (Ibadan) AEZ. The environment plays a significant role in determining root yield with plant age playing a bigger role at the early stages. Results suggest root development was restricted by low moisture stress. Cassava ought to be harvested at eight months after planting (MAP) rather than at 12 MAP in order to obtain maximum yields. Yields at Mokwa were significantly higher than both Minjibir and Ibadan suggesting that cassava is not a crop for either forest or semi arid zones. During both seasons Minjibir had the highest stomatal conductance trend while Ibadan had the lowest. Stomatal conductance at Minjibir becomes critical at 12 MAP. The highest transpiration rate was recorded at Minjibir at 4 and 12 MAP. The lowest transpiration rate was observed at Ibadan. The lowest transpiration rate was also observed during drought. There was a close positive relationship between tuberous roots yield and transpiration. The lowest and highest water use efficiency (WUE) was recorded at 4 and 8 MAP during rains. The lowest and the highest WUE was recorded at Ibadan and Mokwa respectively. The two seasons trends were similar. Clone TMS 50395 had the highest WUE. There was close positive relationship between WUE and tuberous roots yield