

INVESTIGATION OF THE AGRONOMIC AND PHYSIOLOGICAL  
RESPONSES OF COWPEA VARIETIES  
'MI-35' AND 'BOMBAY COWPEA' TO MOISTURE STRESS  
AT SELECTED GROWTH STAGES

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KALPANA BALAKRISHNAN NAIDU

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Supervisor

*[Signature]*

Mr. S..Mahendren  
Lecturer  
Faculty of Agriculture  
Eastern University  
Chenkalady  
Sri Lanka

Date: 18/02/2003

48949

Head / Agronomy

*[Signature]*

Dr. Mrs. T. Mahendran  
Head/ Agronomy  
Faculty of Agriculture  
Eastern university  
Chenkalady  
Sri lanka

Date:.....

**Dr. (Mrs) T. Mahendran**  
HEAD  
Dept. of Agronomy  
Faculty of Agriculture  
Eastern University, Sri Lanka.

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## ABSTRACT

A study was conducted in the Green house of Agronomy farm of the Eastern University, Srilanka to determine the Agronomic and Physiological responses of cowpea varieties 'MI-35' and 'Bombay cowpea' to moisture stress at the vegetative, flowering and pod development stages of the crop. The experiment was layed out in a spilt plot design with four treatments and four replications.

Moisture stress was imposed for different treatments for a period of 12 days at the above growth stages. Moisture stress treatments was imposed by withholding water completely at once. The control plants were regularly watered at four day interval.

Moisture stress reduced the leaf area of cowpea and the leaf area was greatly reduced when the stress was imposed at the vegetative stage of the crop compared to the other growth stages. There was no complete recovery in the leaf area of plants after rewatering.

Stomatal resistance(RS) was significantly higher whereas Transpiration rate (TR), Leaf water potential(LWP) and Relative water content(RWC) were significantly lower than their control values irrespective of the growth stages. The highest RS was observed at the pod developmental stage and the lowest was observed at the vegetative stage. There was not much difference in the TR, LWP and RWC values of plant at different growth stages.

There were no significant difference in the Harvest Index of these plants and the germination percentage of seeds when the stress was imposed at the above growth stages. Moisture stress reduced the yield of cowpea and the reduction was highest when the stress was imposed at the flowering stage.

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