**Ilmo Sra.**

**Editor Chefe da Revista IGEO**

**Dra. Fernanda Cerqueira Vasconcellos**

**Prezado Sra,**

We hereby forward the corrected and revised manuscript entitled "Yield Scenarios of Cowpea Subjected to Water Stress" which has been renamed "Cowpea Yield under Water Stress Scenarios", for your consideration.

First, we would like to thank the reviewers of this study who provided valuable suggestions and very pertinent comments, thus contributing to improve the quality of our article. After a detailed analysis of the comments and questions, as well as the errors pointed out and suggestions contained in the opinions sent to us, the article underwent some changes, which are indicated below.

Thank you in advance for your attention.

In response to the revisions suggestions, some modifications were made which are shown below:

The title of the article was changed to Cowpea Yield under Water Stress Scenarios, as suggested by reviewer A.

To improve the **materials and methods section**, a new figure was added, such as the reference Evapotranspiration (ETo) values, in addition to a new approach (equation) for determining the crop water demand (ETc), using the water balance through of the divine 2000 probe.

The ETo values for rainy and dry seasons can be seen in Figure 2.

Figure 2 Reference evapotranspiration observed during the experiments conducted in rainy and dry seasons.

Water replacement in all subplots, except rainfed ones, was based on 100% ETc, which was estimated using equation proposed by Libardi (1995):

± R (2)

where: ETc - Crop evapotranspiration (mm/day); P - Precipitation (mm/day); I - Irrigation; Δs - Water storage variation in the soil profile; R - Surface runoff; D/A - Deep drainage or capillary rise.

In the **results**, table 1 was removed. A new table was placed with the ETc values.

The ETc values obtained for cowpea cv. ‘Costela de vaca’ cultivated under the edaphoclimatic conditions of the *Agreste* region of Paraíba, in the municipality of Campina Grande, PB, are shown in Table 1. The dry season presented a water demand of 15.1% higher than the rainy season.

Table 1. Duration of initial (I), vegetative development (II), flowering/reproductive (III) and final (IV) phenological stages of cowpea crop and values of rcrop evapotranspiration (ETc).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Stage | Rainy Season Dry Season | | |  |
| Duration (days) | ETc (mm) | Duration (days) | ETc (mm) |
| I | 13 | 54.1 | 62.3 | 55.4 |
| II | 28 | 118.7 | 125.2 | 127.7 |
| III | 13 | 45.6 | 60.9 | 59.1 |
| IV | 16 | 49.2 | 79.3 | 73.0 |
| Total | 70 | 267.6 | 327.7 | 315.2 |