



SDI FINAL EVALUATION FORM 1.1

PART 1:

Journal Name:	Journal of Experimental Agriculture International
Manuscript Number:	Ms_JEAI_41516
Title of the Manuscript:	STRATEGIES FOR TARO (<i>Colocasia esculenta</i>) IRRIGATION
Type of Article:	Short Research Article

PART 2:

FINAL EVALUATOR'S comments on revised paper (if any)	Authors' response to final evaluator's comments												
Comments on Manuscript JEAI-41516R1 entitled "Strategies for Taro (Colocasia Esculenta) Irrigation" The manuscript was improved according to the comments. But, the data presented are not sufficient for a paper in Journal of Experimental Agriculture International. In terms of experimental treatments, irrigation and soil water measurement, the text is weakly structured, contains many repetitions and exhausted phrases. The authors have only presented data of applied water, yield, soil water content, water use efficiency, irrigation water use efficiency which is derived from only one experimental year under unusual climatic condition. The information presented is insufficient for Journal of Experimental Agriculture International. Also, there are several points not adressed in the text should be clarified. The treatments are incorrectly defined: the authors defined the treatments as 10%, 20%, 30, 40% and 50% of total available water (53mm/40cm); however, the water applied in for the treatments T1, T2, T3, T4 and T5 corresponded to 13.2% in T1, 27.5% in T2, 41.3% in T3, 55.9% in T4 and 68.9% in T5 treatment. In Table 1, the amount of water for each treatment do not really match with the experimental treatments defined in the text. <table><tr><th>Treatment</th><th>T1</th><th>T2</th><th>T3</th><th>T4</th><th>T5</th></tr><tr><td>F factor</td><td>0.1</td><td>0.2</td><td>0.3</td><td>0.4</td><td>0.5</td></tr></table>	Treatment	T1	T2	T3	T4	T5	F factor	0.1	0.2	0.3	0.4	0.5	We accept the reviewer comments, but we believe that the presented data are of great importance for taro cultivation in Brazil or other countries, even in the conditions which was carried out, what led to early harvest. In fact, there was a mistake in typing . The bulk density of soil was 1.6 g/cm3, not 1.16 g/cm3. Then, the total available water was 72,96 mm (adjusted in the text). Thus, the values in Table 1 were correct.
Treatment	T1	T2	T3	T4	T5								
F factor	0.1	0.2	0.3	0.4	0.5								



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Water depletion mm)	7.3	14.6	21.9	29.2	36.5	Incorrect
Water depletion mm)	5.3	10.6	15.9	21.2	26.5	Corrected
The same is true for Figure 4-6 also. Since all the calculations and analysis are based on these water depletion, the reliability of this table is questionable. Therefore, all figures (Fig. 4-6) should be checked and all the calculations should be done again. Due to the occurrence of hail rain, which damaged the aboveground part of the crop, it was necessary to perform the harvest before the planned. Thus, the crop cycle had only 169 days, that is, 41 days less than planned. It is unacceptable or not? In the keywords, taro was repeated in the title. It could be replaced by other words. In the introduction, there are many literature in the introduction some can be deleted and it should be reduced including only the most relevant. Material and methods are incomplete and lacking in major information: dimension of plots, row spacing and inrow, instrument used to measure soil water content, etc. It should be given in the text. In material and methods, growing stages of taro should be provided in the text. Growth stages of taro was monitored under different treatments or not? In material and methods, "It was installed a drip irrigation system, divided in subunits, to irrigate the plots individually, according to the treatments". What was the lateral position, according to the plant rows, emitter spacing and emitter flow rate ($L\ h^{-1}$) in the study. No information was given in the text. P4L132-136, "The water use efficiency was determined by the ratio of the productivity (t ha⁻¹) values and the total water applied (irrigation and rainfall depths (mm), in each treatment, and], we calculated the irrigation water use efficiency, by dividing the irrigation depths applied by the productivities observed in each treatment". As I mentioned in the previous comment, these definitions are wrong. It should be corrected the WUE and IWUE definition in the text. Water use efficiency (WUE) and irrigation water use efficiency (IWUE)						
These values presented in Table 1 are correct. The wrong values of bulk density and TAW (1.16 g/cm³ and 53 mm, respectively) led to misunderstanding the table. The figures were checked. The values are those presented. We believe that the values presented are useful, even with the harvest having been made before the planned. Done We think that the literature cited is important for the justification of the research and does not compromise its scientific value. Thus, we would like to maintain these citations. Done in lines [72-75]. The soil moisture was determined by the stove method (described in lines [99-100]).						



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should be calculated as seed yield divided by seasonal ET and total seasonal irrigation water applied, respectively (Howell, 2001).

Howell T A (2001). Enhancing water use efficiency in irrigated agriculture. Agronomy Journal; 93(2):281-289.

In results and discussion, "During the experimental period, a total rainfall of 150 mm was rained, with the greatest amount occurring in the initial phase, with precipitation decreasing until day 137. On the 138th day, rainfall was 19 mm and on 140th day, 2.5 mm, from which no more rainfall occurred in that period". P4L143-146, the most of rainfall during initial must have been percolated below the root zone. Have you determined this deep percolation? Also, is there any information a water table depth?

In results and discussion, In Figure 2, not use same axis for temperature and rainfall. Authors can be use second axis for rainfall.

P3L94-97, "We determined the irrigation levels (mm), individually for each treatment, using spreadsheets that calculated the water balance with climate measurements (maximum and minimum temperatures and the rainfall) and sporadic determination of soil moisture, with the stove method, for checking purposes". In Figure 3, The soil moisture values is calculated values, not the measured ones. That's why, These values of soil moisture do not reflect reality.

In results and discussion, P5L156-158, from the 39th day after sowing, the rains decreased and the irrigations were differentiated, in terms of depths and frequencies, according to the treatments. In Table 2, Irrigation water was applied 119 times to T1 treatment from DAS-39 to DAS-169 (DAS: days after sowing). Also, There is no data on harvesting date. Irrigation water was stopped one week before harvesting. (DAS-159). It means that irrigation interval of T1 treatment is 1 day. Also, authors suggested T1 treatment in conclusion part. This management is practically applied and economically feasible or not?

In results and discussion, In Table 2, the amount of irrigation water ranged between 247-304 mm. When we look at the total yield values, It varied 5.0 -17.5 t ha⁻¹ according to the treatments. It means that 50 mm irrigation water increases yield by 4 times. The data of

It was given in lines [104-105].

Provided in lines [79-81].

Corrected on the lines [138-140], in Table 2 and in Figure 6A.

We consider total rainfall. However, when it rained, we considered that the values of precipitation that exceed the storable capacity in the soil, were drained.



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yield of taro are impossible, 17.5 t ha⁻¹ is ridiculously production with 50 mm irrigation water for taro crop. In results and discussion, Figure 4 shows the relationship between the total water depths (irrigation and rainfall) depending on the soil water depletion. P4L143-146, the most of rainfall during initial must have been percolated below the root zone. Have you determined this deep percolation and effective rainfall? Figure 4 should be deleted in the text.	We did not measure the water table depth. We believe that there is no influence of this in the rootzone. In another experiments, with different irrigation depths, we observed that with lower depths the crops did not develop, because the drought stress. Done Yes, these values were calculated, but we compared the calculated values to the measured. As we did not have soil moisture sensors, we needed to determine the soil moisture with the stove method, each 15 days, approximately. For the T1 treatment, the irrigations were performed daily, to restore the depth that was evapotranspired until the depleted water limit (10% of TAW). If there was a rainfall, we did not irrigate. (This information was also placed in the text [163-165]. Yes, we concluded that more frequent and lighter irrigations promoted higher yields and water use efficiency. We believe that is not only the amount of water that promotes a better conditions for crop yield. In this study, we evaluated the water depletion along the crop cycle. Thus, when we permitted the soil moisture to decrease until 50% of TAW, the crop presented lower yields. It is not only 50 mm. It was 304 mm of irrigation plus 150 mm of total rainfall.
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	We did not determine the deep percolation, but we considered that from total rain, only that could be stored in the soil profile (40 cm), depending on the soil moisture, was used for the crop. We would like to maintain the figure 4, because it reflects how much of water was delivered to the crop, depending on the treatment.
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