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Journal Name:	Journal of Experimental Agriculture International
Manuscript Number:	Ms_JEAI_48120
Title of the Manuscript:	Genotype x harvest cycles interaction in sugarcane on the South Coast of Pernambuco
Type of the Article	Original Research Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:
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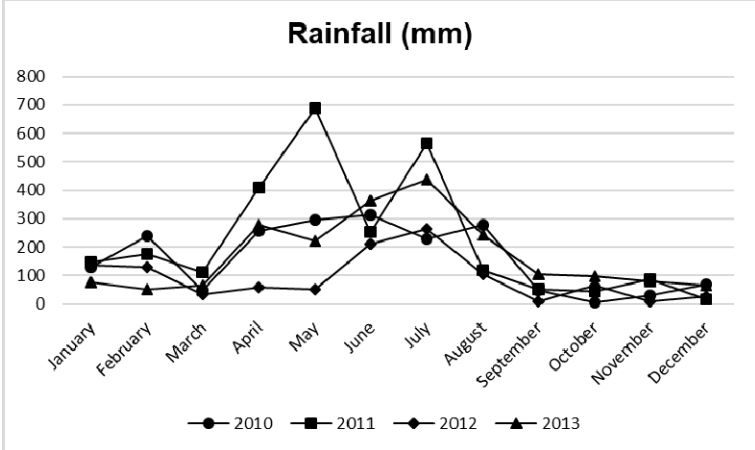
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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments 1.	<p>This Journal paper is technically acceptable. Topic, Abstract, Introduction, Materials and Methods, Results and Discussion, Figure 1, 5 Tables, Conclusion and References are of acceptable standard. Few minor revision suggestions are made to upgrade this work.</p> <ol style="list-style-type: none"> 1. Could check through the entire write up and change 'genetic gains' to 'genetic gain' and 'economic gains' to 'economic gain' ie. Remove 's' 2. In Line 246: Could have written the names and initials of all the authors in place of '1. Scortecci KC et. al.' 3. In Line 273: Could replace 'bissegmented' with 'bi-segmented' 4. Line294: Could replace 'Ov Kings'. with Kings OV. 5. Line 340: Could replace '2002b'. with 2002. 	<ol style="list-style-type: none"> 1. All change to remove 's' was made. 2. 1. Scortecci KC, Creste S, Calsa Jr T, Mauro A, Landell MG, Figueira A, A., Benedito VA. Challenges, opportunities and recent advances in sugarcane breeding. In: Abdurakhmonov IY editor. Plant breeding. Rijeka: Intech; 2012. 3. 8. Garbuglio DG, Gerage AC, Araujo PM, Juniro NSF, Shioga PS. Factor analysis and bi-segmented regression in studies of environmental stratification and adaptability in maize. Pesquisa Agropecuária Brasileira. 2007; 42 (2): 183-191. 4. 14. Melo LJOT, Oliveira FJ, Bastos GQ, Annunciation Son CJ da, Kings OV. Genotype interaction x sugarcane harvest cycles of the Zona Norte Mata de Pernambuco. Bragantia. 2006;65(2):197-205. 5. 27. Silva MA, Landell MGA, Gonçalves PS, Martins ALM. Yield components in sugarcane families at four locations in the state of São Paulo, Brazil. Crop Breeding and Applied Biotechnology. 2002;2(1):97-106.
Minor REVISION comments	<ol style="list-style-type: none"> 1. Lines 3 to 4: Topic could be written in the accepted format as – Genotype x Harvest Cycles Interaction in Sugarcane on the South Coast of Pernambuco 2. Between Lines 11 to 12: Could be as follows – - Study design: The experiment was conducted in a randomized complete block design. - 12 MAP during the two subsequent cycles were evaluated in tons of sugarcane per hectare (TCH), - UFRPE1 exceeded all commercial varieties in TPH. - Conclusion: The simple fraction of the genotype x harvest cycles (G x C) interaction provides 3. Lines 13 – 14: Keywords could be written as – Keywords: Saccharum spp., genotype x harvest cycles interaction, genetic gain. 4. Line 48: Could put 's' after MATERIAL as - 2. MATERIALS AND METHODS 5. Lines 50 – 52: Could move forward 'Republic of Brazil (RB)' as – Fourteen genotypes of the Sugarcane Genetic Improvement Program (PMGCA) of the Interuniversity Network for the Development of the Sugarcane Sector (RIDESA), Republic of Brazil (RB) were evaluated, 6. Line 56: Could put as - under a randomized complete block design (RCBD), with 	<ol style="list-style-type: none"> 1. Genotype x Harvest Cycles Interaction in Sugarcane on the South Coast of Pernambuco 2. - Study design: The experiment was conducted in a randomized complete block design. - 12 MAP during the two subsequent cycles were evaluated tonnes of sugarcane per hectare (TCH), tons of pol per hectare (TPH) and total recoverable sugar (ATR). - UFRPE1 exceeded all commercial varieties in TPH. - The simple fraction of the genotype x harvest cycles (G x C) interaction provides genetic gain. (It also was reviewed in conclusions topic). 3. - Keywords: <i>Saccharum spp., genotype x harvest cycles interaction, genetic gain.</i> 4. 2. MATERIALS AND METHODS 5. Fourteen genotypes of the Sugarcane Genetic Improvement Program (PMGCA) of the Interuniversity Network for the Development of the Sugarcane Sector (RIDESA), Republic of Brazil (RB), were evaluated, being eleven clones of the RB 2004 series, developed by the Sugarcane Experimental Station of Carpina (EECAC), belonging to the Federal Rural University of Pernambuco (UFRPE), and three commercial RB varieties. 6. The experiment was conducted under a randomized complete block design




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	<p>four</p> <p>7. Between Lines 69 – 70: (Figure 1.) - names of the months January to December could be re-written In English</p> <p>8. Line 87: Could delete '(P<0.05)' as - grouped by the Scott and Knott test [20].</p> <p>9. Line 100: Could put table 1. as – Table 1.</p> <p>10. Line 120: Could check meaning of – various' crops of the crop' corroborates</p> <p>11. Line 121: Could replace 'is' with 'are' as - characters TCH, TPH and ATR are strongly</p> <p>12. Line 146: Could delete one of the two UFRPE 2,</p> <p>13. Line 152: Could put 's' after harvest cycle as - harvest cycles. These results</p>	<p>(RDBC), with four replications, and evaluated during the 2011/2012, 2012/2013 and 2013/2014 agricultural years in the agricultural area of the Cucaú Plant, located in the Municipality of Rio Formoso (8°39' 49" S and 35°09'31" W, altitude of 5m), Microregion of the Southern Forest of Pernambuco. The experimental unit was represented by five grooves of 8.0 m in length, spaced in 1.0 m, totaling 40 m².</p>  <p>7.</p> <p>8. The effects of genotypes (G) were determined as fixed, while the effects of harvest cycles (C) were randomized. The test F (P<0.01 e P<0.05) was applied and the means were grouped by the Scott and Knott test [20].</p> <p>9. It was verified that the relation between the highest and the lowest value of the QMR was 1.93, 1.56 and 2.32 respectively for the variables TCH, TPH and ATR. According to Pimentel-Gomes [23], it can be affirmed that there is homogeneity among the residual variances, which allows the accomplishment of the analysis of joint variance, according to Table 1.</p> <p>10-11. The differentiated behavior of the genotypes in the various harvest cycles corroborates that the genotypic expression of the polygenic characters TCH, TPH and ATR are strongly influenced by the environment (Table 1).</p> <p>12. Among the genotypes evaluated, the UFRPE10, UFRPE06 clones and the cultivar RB863129 stood out in the first harvest cycle, which presented the following averages 116.50, 106.31 and 104.75 tons of sugarcane per hectare, respectively. In the second cycle, the genotypes UFRPE10, UFRPE11, UFRPE8, UFRPE6, UFRPE7, RB863129, UFRPE2, UFRPE1 and UFRPE9 showed the highest means, but statistically equal. Finally, in the third harvest cycle, UFRPE6, UFRPE10, UFRPE8, UFRPE7, UFRPE2, UFRPE1, UFRPE11 and UFRPE9 clones exceeded all commercial varieties, demonstrating that the available genetic variability favored statistically significant selection gain (Table 2).</p> <p>13. For the variable tones of pol. Per hectare (TPH), one can observe the formation of five distinct groups for the first harvest cycle and three different groups for the second and third harvest cycles. These results confirm that this character is influenced by the harvest cycles and that the variations presented are due to the different genotypic characteristics of the clones under study, according to table 3. Similar data were found by Arantes [28] in the State of</p>
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	<p>14. Line 134: Could put 'table 3' as - according to Table 3.</p> <p>15. Line 181: Could put 'table 4' as - according to Table 4.</p> <p>16. Between Lines 192 and 193: In Table 4. Could correct as – Change Soca to Second, First to Third, Media to Averages Under UFRPE4; Third - could change 143.02aB to 143.02aA Under UFRPE5; Third - could change 140.18aB to 140.18aA</p> <p>17. Line 203: Could be changed to - resulted to the complex type fraction being predominant, according to Table 5.</p> <p>18. In Table 5. Between Lines 204 and 205: Could change 'tonnes to tons</p> <p>19. In Line 206: Could change table 5 to Table 5</p> <p>Line 206: Could replace being with 'but was' as - TPH (62.41%) variables, but was not significant</p>	<p>São Paulo, which states that the TPH variable is dependent on the environmental factor.</p> <p>14. For the variable tones of pol. Per hectare (TPH), one can observe the formation of five distinct groups for the first harvest cycle and three different groups for the second and third harvest cycles. These results confirm that this character is influenced by the harvest cycles and that the variations presented are due to the different genotypic characteristics of the clones under study, according to Table 3. Similar data were found by Arantes [28] in the State of São Paulo, which states that the TPH variable is dependent on the environmental factor.</p> <p>15. Regarding the variable total recoverable sugar (ATR), in the first harvest cycle, four groups were statistically different. The genotypes UFRPE6, RB92579 and UFRPE10 presented the highest averages, respectively 146,67, 149,06 and 143,22 kilograms of sugar per tons of sugarcane, according to Table 4. Differentiated ATR values among sugarcane genotypes in the first harvest cycle were also observed by Silva et al. [30], which studied the productive potential of sugarcane under irrigation in the State of São Paulo. Similar results were also observed by Souza et al. [25] when evaluating sugarcane genotypes for the beginning of the harvest in the northern forest area of Pernambuco.</p> <p>16.</p> <p> Table 4. Mean values of total recoverable sugar (ATR) obtained in sugarcane genotypes in the first, second and third harvesting cycles, in the coast south of Pernambuco, Usina Cucaú, in the years 2010/2011, 2011/2012 and 2012/2013.</p> <table><tr><th rowspan="2">Genotypes</th><th colspan="3">ATR</th><th rowspan="2">Média</th></tr><tr><th>First</th><th>Second</th><th>Third</th></tr><tr><td>UFRPE6</td><td>146.67aA</td><td>151.51aA</td><td>145.94aA</td><td>148.04</td></tr><tr><td>RB92579*</td><td>149.06aA</td><td>145.52aA</td><td>146.80aA</td><td>147.12</td></tr><tr><td>UFRPE4</td><td>137.43bB</td><td>151.38aA</td><td>143.02aB</td><td>143.94</td></tr><tr><td>UFRPE7</td><td>134.54bB</td><td>142.56bB</td><td>151.66aA</td><td>142.92</td></tr><tr><td>UFRPE10</td><td>143.22aA</td><td>141.15bA</td><td>144.37aA</td><td>142.91</td></tr><tr><td>UFRPE5</td><td>136.26bB</td><td>148.46aA</td><td>140.18aB</td><td>141.63</td></tr><tr><td>UFRPE11</td><td>137.94bB</td><td>136.45bB</td><td>149.02aA</td><td>141.13</td></tr><tr><td>UFRPE9</td><td>134.86bB</td><td>135.93bB</td><td>149.68aA</td><td>140.16</td></tr><tr><td>RB863129*</td><td>135.49bA</td><td>140.50bA</td><td>142.84aA</td><td>139.61</td></tr><tr><td>UFRPE2</td><td>138.63bA</td><td>140.43bA</td><td>138.56aA</td><td>139.20</td></tr><tr><td>RB867515*</td><td>130.26cB</td><td>140.80bA</td><td>145.91aA</td><td>138.99</td></tr><tr><td>UFRPE3</td><td>127.26cB</td><td>139.04bA</td><td>145.20aA</td><td>137.17</td></tr><tr><td>UFRPE1</td><td>119.99dB</td><td>140.70bA</td><td>142.93aA</td><td>134.54</td></tr><tr><td>UFRPE8</td><td>120.58dB</td><td>137.20bA</td><td>138.95aA</td><td>132.24</td></tr></table> <p>(*) Commercial varieties (standards); Averages followed by the same lowercase letters at the vertically and by the same uppercase letters at the horizontally constitute a statistically homogeneous group by the Scott and Knott [20] clustering test (P<0.05).</p> <p>17. Estimates of the simple and complex fractions of the interaction genotypes x harvest cycles showed that the simple type fraction between cycles C1 and C2 for TCH (67.91%) and TPH (69.35%) variables was predominant, while for the ATR variable, 56.42% of the interactions resulted of the complex type fraction being predominant, according to Table 5.</p> <p>18-19. Table 5. Estimates of the simple (% FS) and complex (% FC) fractions of the interaction genotypes x harvest cycles and correlation (r) between pairs of harvest cycles for tons of sugarcane per hectare (TCH), tons of pol. per hectare TPH) and total recoverable sugar (ATR).</p> <p>- It is observed in Table 5 that, for the pair C2 x C3, the simple fraction of the interaction G x C predominated only in the TCH (62.85%) and TPH (62.41%)</p>	Genotypes	ATR			Média	First	Second	Third	UFRPE6	146.67aA	151.51aA	145.94aA	148.04	RB92579*	149.06aA	145.52aA	146.80aA	147.12	UFRPE4	137.43bB	151.38aA	143.02aB	143.94	UFRPE7	134.54bB	142.56bB	151.66aA	142.92	UFRPE10	143.22aA	141.15bA	144.37aA	142.91	UFRPE5	136.26bB	148.46aA	140.18aB	141.63	UFRPE11	137.94bB	136.45bB	149.02aA	141.13	UFRPE9	134.86bB	135.93bB	149.68aA	140.16	RB863129*	135.49bA	140.50bA	142.84aA	139.61	UFRPE2	138.63bA	140.43bA	138.56aA	139.20	RB867515*	130.26cB	140.80bA	145.91aA	138.99	UFRPE3	127.26cB	139.04bA	145.20aA	137.17	UFRPE1	119.99dB	140.70bA	142.93aA	134.54	UFRPE8	120.58dB	137.20bA	138.95aA	132.24
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	<p>20. Line 210: Could replace 'is reinforced by' with 'corroborate' as - This statement corroborates the results</p> <p>21. Line 211: Could put 'table 4' as - previously in Table 4.</p> <p>22. Line 231: Could be - The simple fraction of the genotype x harvest cycles (G X C) interaction provides genetic gain, making</p>	<p>variables, but was not significant for the variable ATR.</p> <p>20-21. These results indicate that most of the evaluated genotypes presented differentiated responses of low intensity as a function of the variation between subsequent agricultural years. This statement corroborates the results of the average test between cycles C1 x C2 and C2 x C3 presented previously in Table 4.</p> <p>22. The simple fraction of the genotype x harvest cycles (G x C) interaction provides genetic gain for yield of sugarcane and sugar in selection in subsequent pairs of harvest cycles, year by year.</p>
<p>Optional/General comments</p> <p>A good work.</p>		

PART 2:

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Are there ethical issues in this manuscript?	(If yes, Kindly please write down the ethical issues here in details)	