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JATROPHA CURCAS PRODUCT PLACEMENT TRIALS (PPTS) HAITI SEASON 2

SECOND INTERIM REPORT

February 2012



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Contract No. EPP-I-04-04-0020

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INTRODUCTION

As stipulated in subcontract EPP-I-00-04-00020-00-04-SUBK-FFP-QUIN-1 under the Haiti Watershed Initiative for National Natural Environmental Resources (Haiti WINNER), subcontractor Quinvita is required to submit two interim reports based on *Jatropha* trial data sent by the WINNER team and processed by Quinvita on a monthly basis. This second and last report summarizes the available results of observations made in 2011.

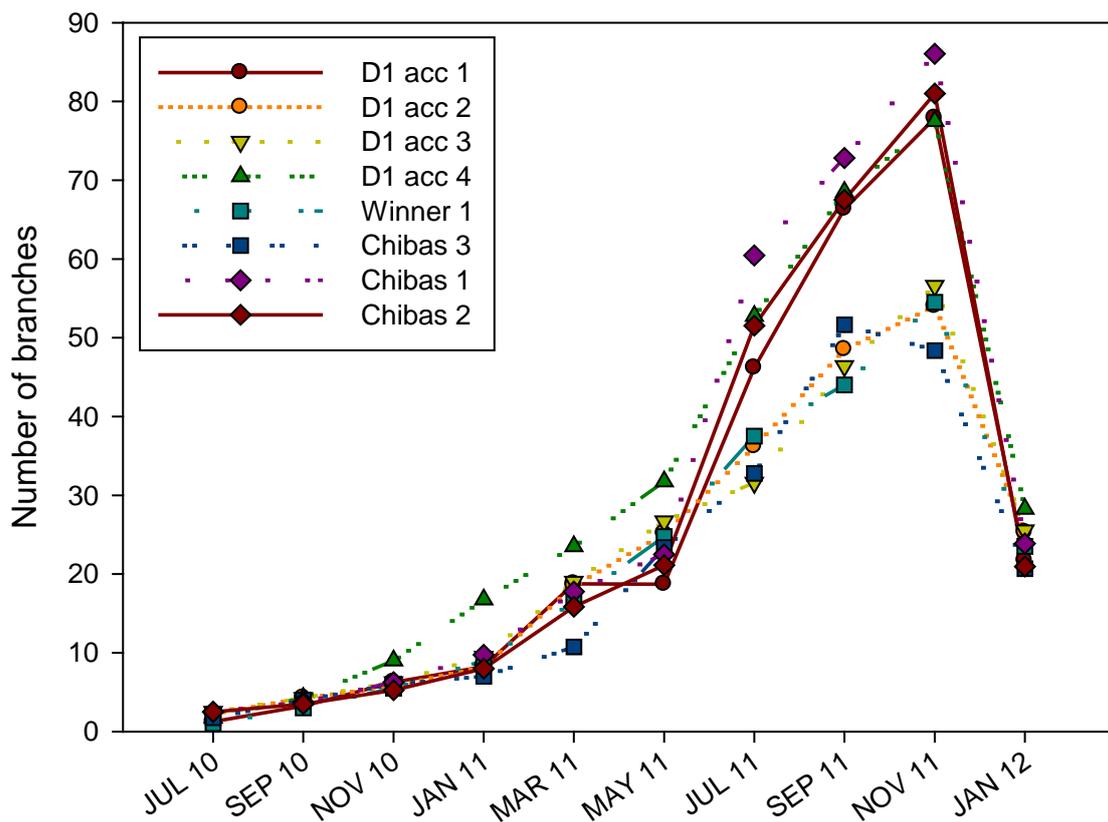
CENTRE RURAL DU DEVELOPPEMENT DURABLE (CRDD) BAS BOEN

Vegetative Parameters

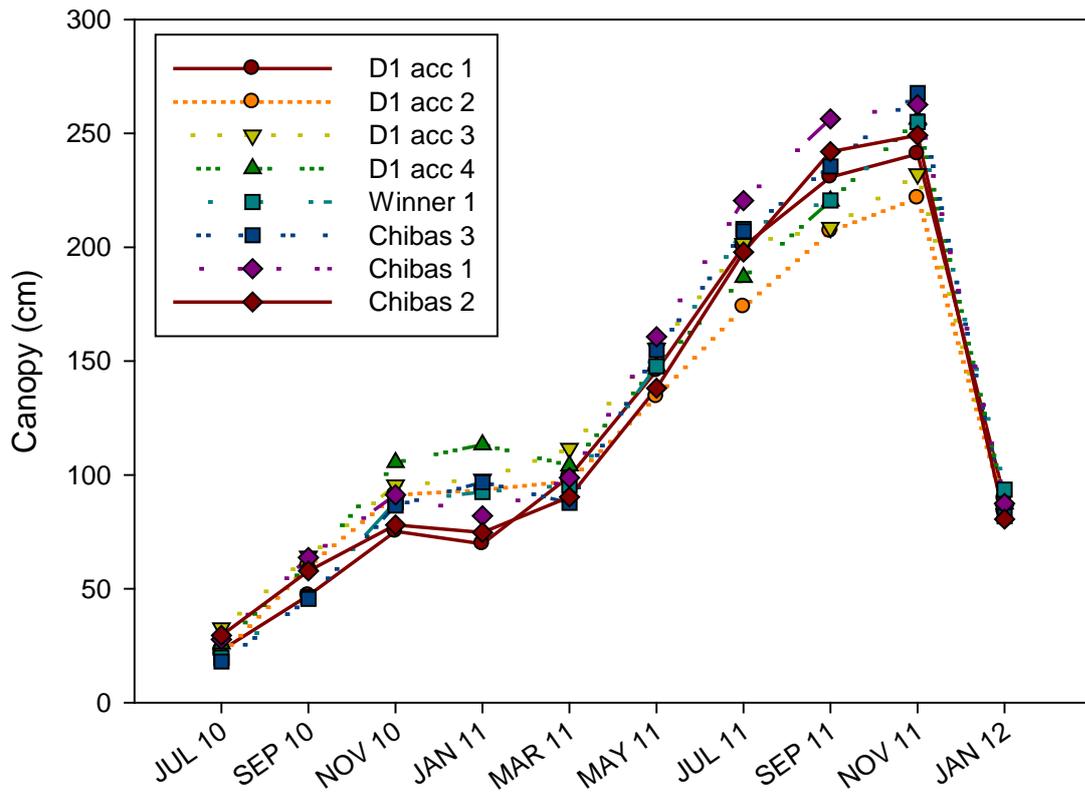
The evolution graphs based on the observations of the vegetative parameters are presented below for the *Jatropha* trial in Bas Boen.

Note: After a visit to the trial site in May 2011, it was decided to omit the results of plots 6, 11, 20, 21, 30, 31 and 32 from the analysis. It was determined that they would result in unreliable data as growth on these plots was poor and heterogeneous due to water logging and flooding. As such, all analyses from February 2011 onwards (i.e. all observations after the pruning on January 28, 2011) were done excluding the results of these plots.

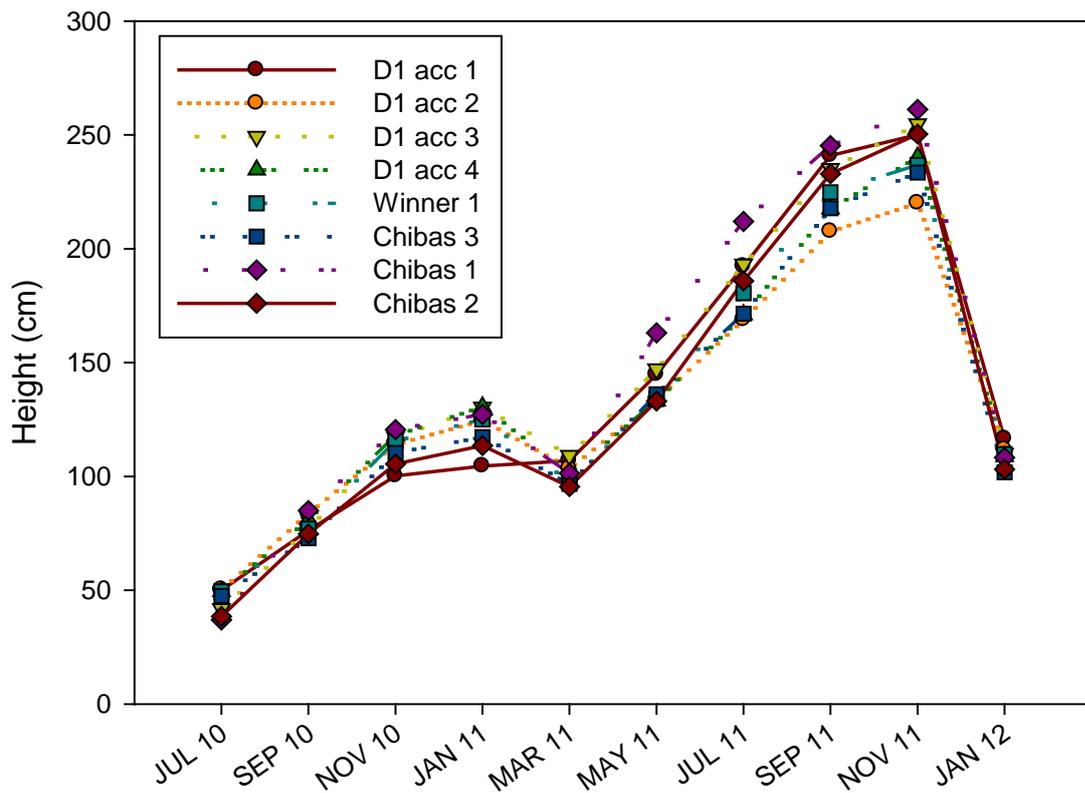
JC-2010-40 50901 CRDD Bas Boen - Branch evolution



JC-2010-40 50901 CRDD Bas Boen - Canopy evolution



JC-2010-40 50901 CRDD Bas Boen - Height evolution



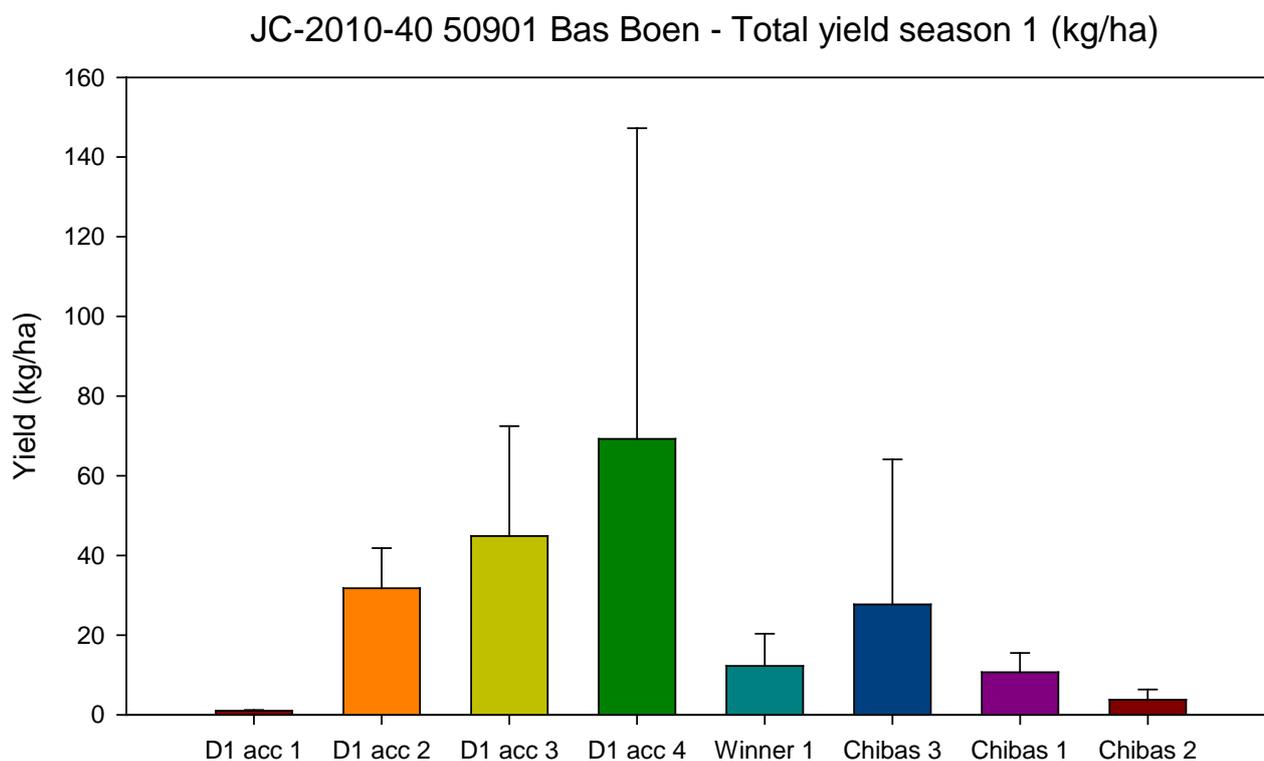
As can be seen above, no significant differences occurred between the accessions during the first two growing seasons. However, for the number of branches it can be seen that four of eight accessions have developed a considerably higher number of branches during season two, namely D1 acc 1, D1 acc 4, Chibas 1 and Chibas 2.

The above results confirm the observations made during both agronomy specialist trips: no visual, consistent differences in canopy or height could be observed between any of the treatments, taking into account the heterogeneity of the trial.

Generative Parameters

Season 1

Below is the total yield in kg/ha for the first season:

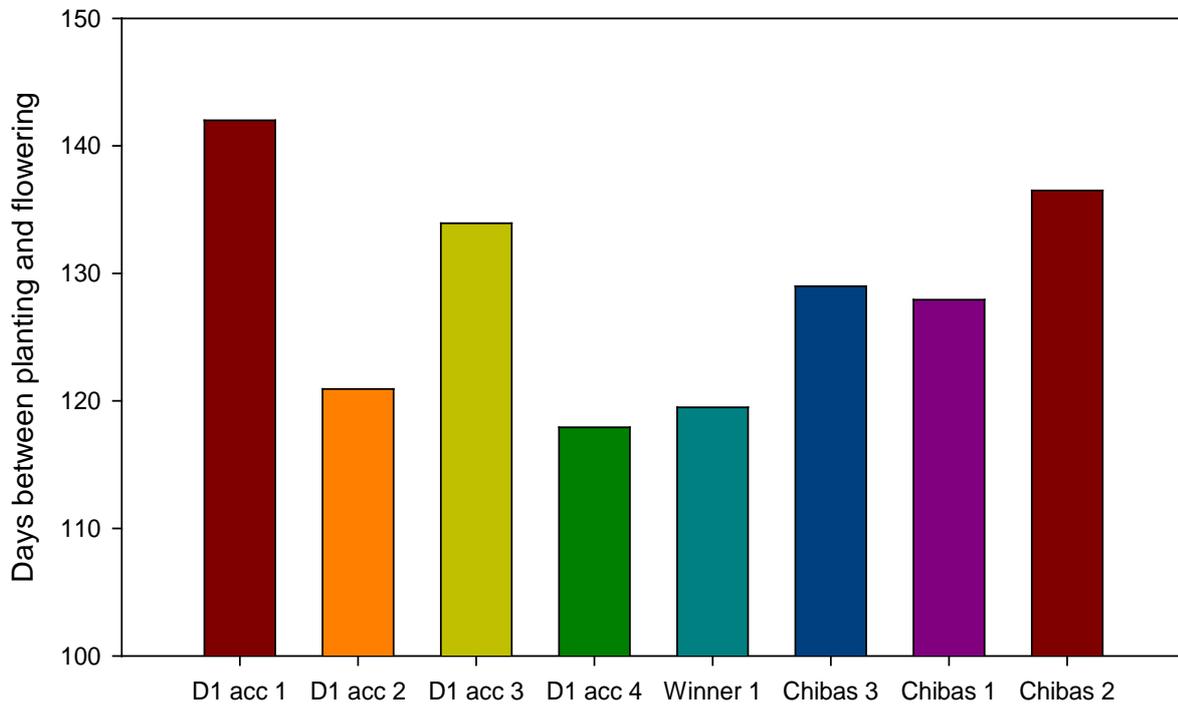


It may be clear from this graph that there were considerable differences in the total yield between the 8 accessions, with D1 acc 4 clearly having the highest yield.

When looking at this graph, however, one must take into account the status of the trial during the first season. As described in the previous visit and interim reports, the trial suffered greatly from pests and diseases due to flooding and water logging problems. This will have certainly influenced the final results (e.g. the very low yield of D1 acc 1 and Chibas 2) and is the main reason for the very high coefficients of variance of the analysis (see error bars in the graph), resulting in differences not being statistically significant. Nevertheless, we can expect the main trend of these results to be reliable.

Another important generative parameter is the number of days an accession needs to start flowering and hence fruiting. In the graph below, one can see the number of days needed to reach the flowering status in the first season.

JC-2010-40 50901 Bas Boen - Days between planting and flowering (season 1)



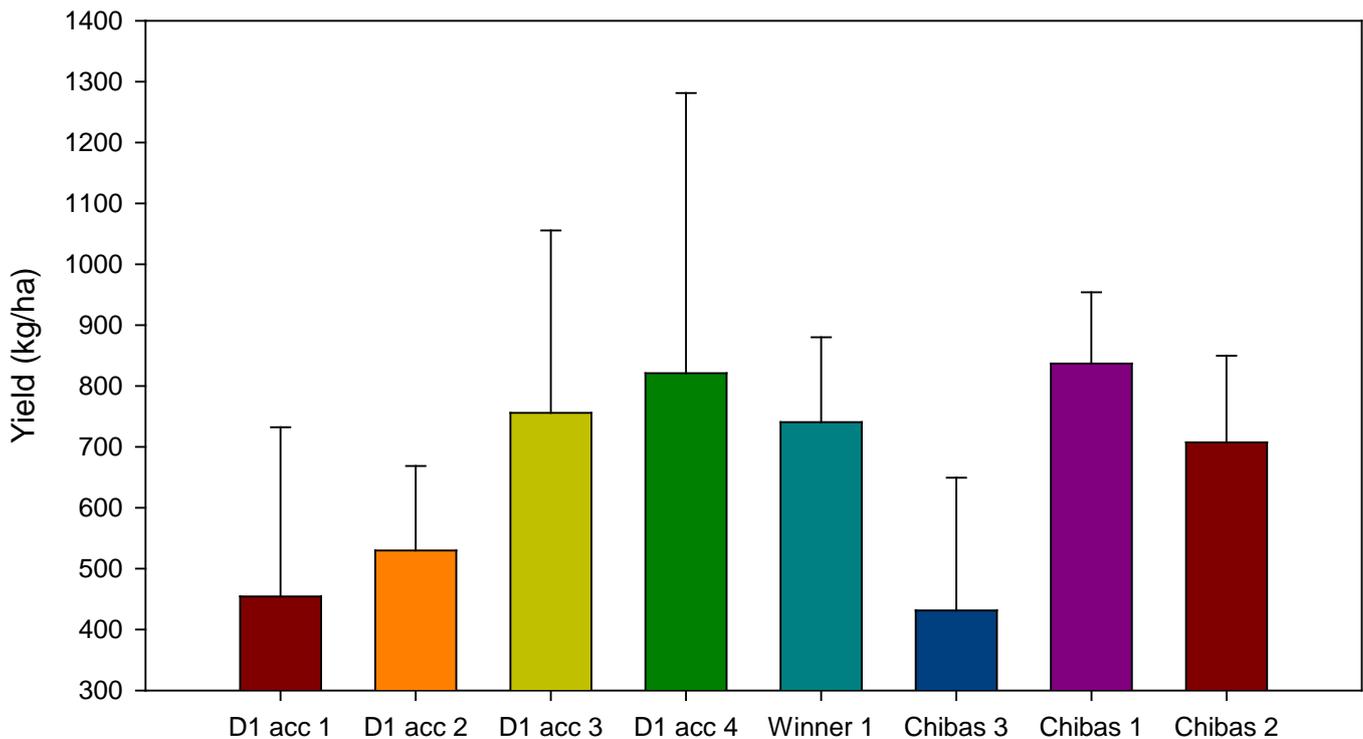
In comparison with the yield figures from season 1, some clear differences can be seen, with D1 acc 4, WINNER 1 and D1 acc 1 reaching the flowering status the first. However, also here one must be aware that there was a high variability within the replicates of the trials and that only 112 plants out of the 288 originally planted, finally flowered in the first season (i.e. 39%).

Season 2

In the second season, yield was only harvested from the month of June onwards. However, in July, August, and September, it appears that no fruits were harvested. Only in October, November, and December 2011 was a considerable yield peak observed.

The graphs below summarize the total yield in kg/ha for the various accessions (including error bars).

JC-2010-40 50901 Bas Boen - Total yield season 2 (kg/ha)



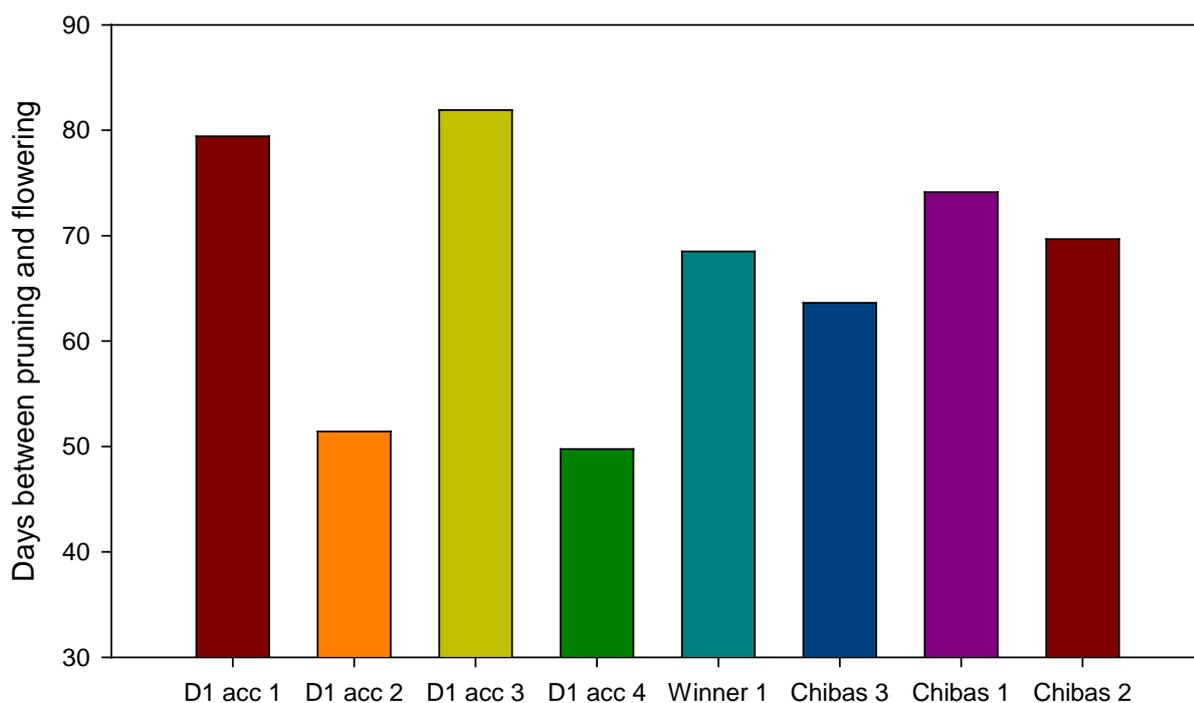
As was seen in the first season, it is clear that there is still a high variability in the above presented numbers. As a consequence, none of the differences in yield in kg/ha as seen above are significant.

Furthermore, the high yield figures in kg/ha are rather surprising. Taking into account the observation of the October 2011 visit that grains were not dried prior to storage, these high yield figures may be due to the weighing of grains without drying them first. Weighing wet grains will inevitably result in an overestimate of yield figures.

Nevertheless, it is clear from the graph that five accessions have a considerably higher yield, and out of these, Chibas 1 and D1 acc 4 have the highest yield in the second season.

Data on the days between pruning (conducted on January 28, 2011) and the start of the flowering are presented in the graph below.

JC-2010-40 50901 Bas Boen - Days between pruning and flowering (season 2)



As compared to the first season, it is clear that the number of days necessary to reach flowering is much lower. This is due to the absence of an “establishment period”, which the plants needed in the first season.

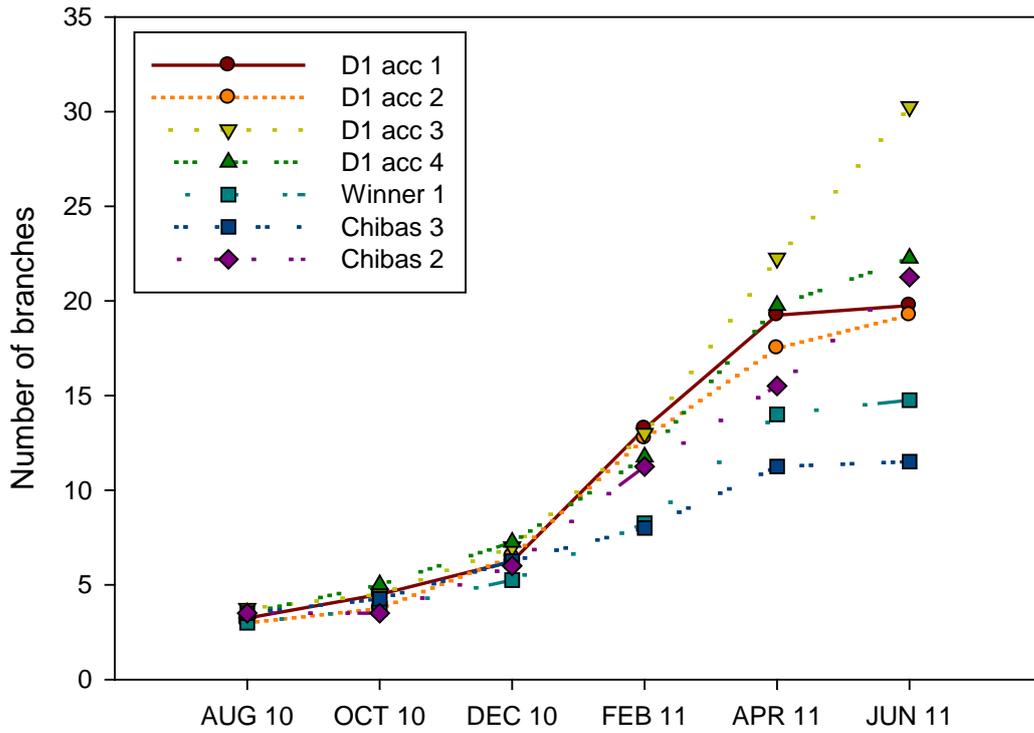
As observed in the first season, D1 acc 4 and D1 acc 2 are again the quickest accessions when it comes to flowering. The results of the second season are far more reliable than those of the first season, since 164 of the 225 remaining trees (7 plots were omitted from the trial as discussed above, resulting in 63 less plants to be observed), or 73%, flowered at the time this report was prepared.

CRDD LA BRANLE

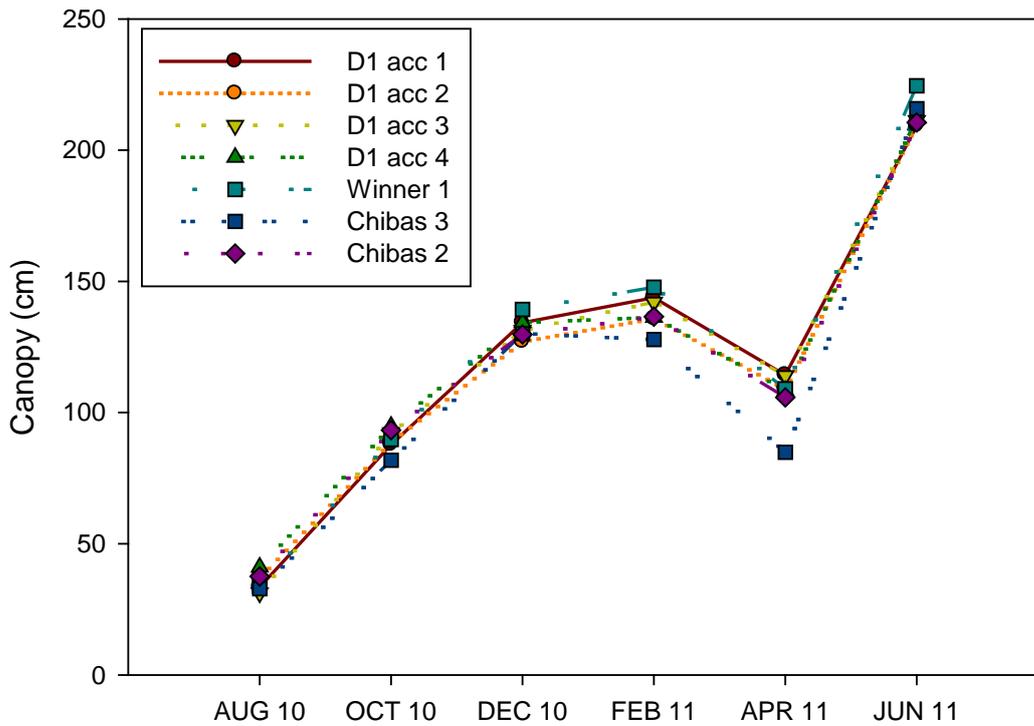
Vegetative Parameters

The evolution graphs based on the observations of the vegetative parameters are presented below for the trial in La Branle. Note that only data up to June 2011 was made available for this report.

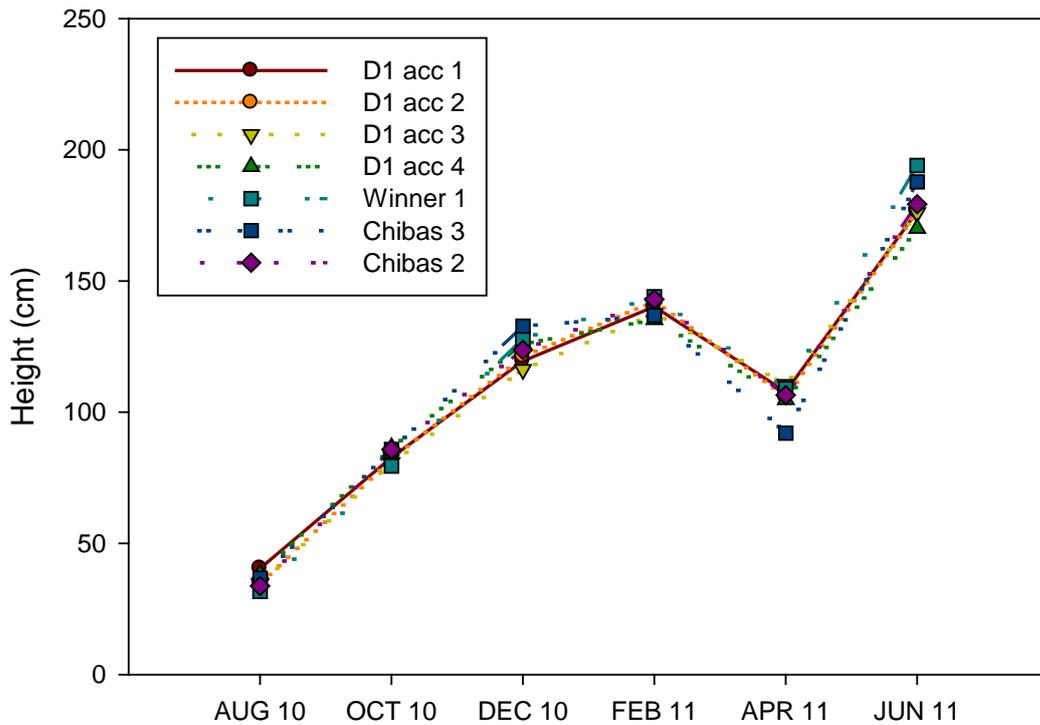
JC-2010-40 50903 La Branle - Branch evolution



JC-2010-40 50903 La Branle - Canopy evolution



JC-2010-40 50903 La Branle - Height evolution



Significant differences between the various accessions were only observed in the number of branches, with D1 acc 3 having the highest number of branches and D1 acc 4 having the highest but one. The Chibas 3 and Winner 1 accessions had the lowest number of branches, being only half or less than that of D1 acc 3.

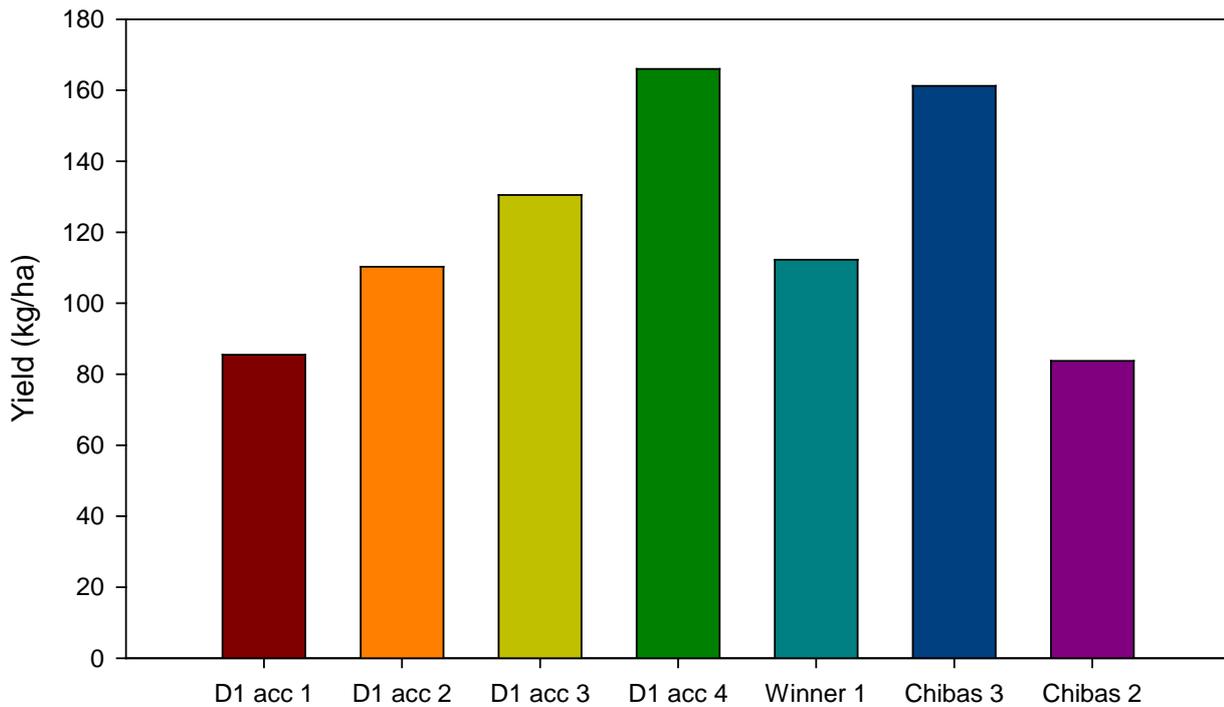
No differences in canopy or height were observed between accessions, confirming what was observed by WINNER staff in May and October 2011. Apart from some fenotypic features such as the shape and color of the Chibas 3 leaves, it is impossible to distinguish the various accessions based on canopy and/or height.

Generative Parameters

Season 1

Below is the total yield in kg/ha for the first season.

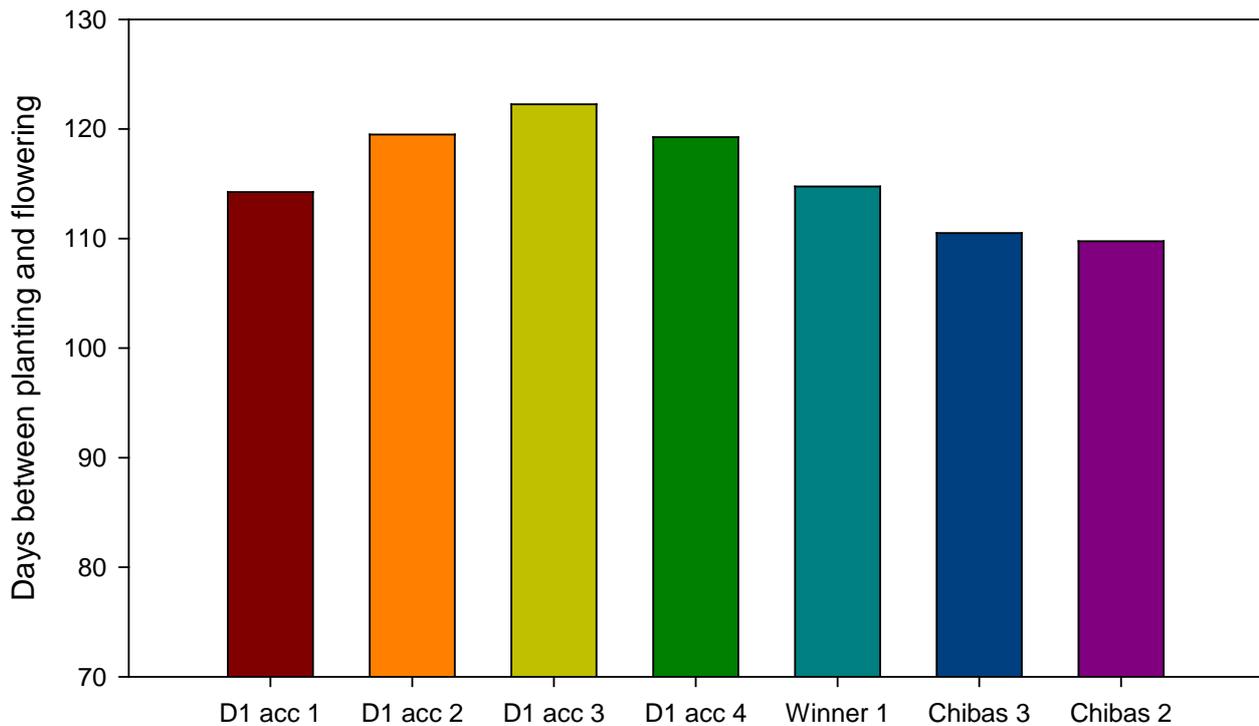
JC-2010-40 50903 La Branle - Total yield season 1 (kg/ha)



Yield was harvested in December 2010 and January and February 2011. As seen in the first season's yield data from CRDD Bas Boen, there were considerable differences in yield between the various accessions for La Branle. As seen at Bas Boen, D1 acc 4 had the highest yield, followed by Chibas 3.

The graph below illustrates the number of days needed to reach flowering status for the various accessions in the La Branle trial.

JC-2010-40 50903 La Branle - Days between planting and flowering (season 1)



Although the differences are small, Chibas 3 and Chibas 2 needed the shortest period to reach flowering in the first season.

In general, the number of days between planting and flowering was less than the number observed in the trial at Bas Boen, although the latter was planted one month earlier. This difference can most likely be linked to the general status of both trials during this first season.

Season 2

No data on yield and/or flowering in the second season was made available for this report.

PESTS AND DISEASES

It was asked by WINNER if the various accessions could also be compared for their resistance to pests and diseases. Although difficult to observe this in a measurable parameter, the local WINNER staff working on the trials were asked to follow up the pest and disease incidence in the trials. This was extensively discussed during the visits in May and October 2011.

According to the WINNER staff, no clear differences could be observed between the various accessions in terms of pest and disease resistance

In Bas Boen, various trees were affected by pests and diseases, but there was no trend to be observed between accessions. Staff confirmed that they could not identify a certain accession which was less or more affected as compared to the others. In contrast, in La Branle, very few trees were affected by pests and diseases at the time of the visit in May 2011, also indicating little difference between accessions.

CONCLUSIONS

Based on the currently available data summarized above, the most suited accession out of the 8 being tested seems to be D1 acc 4. This conclusion is also supported by other data that Quinvita has collected from product placement trials in various countries.