



CHEMONICS INTERNATIONAL INC.



PROGRESS REPORT ON PRODUCT ACTION PLANS

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1. INTRODUCTION

This report covers two three day trips to Rwanda, November 16th - 18th 2001 and January 4th - 6th 2002, by James Cartwright the Horticultural Specialist to the ADAR project. The main objective of these trips was to review progress on the Butare french bean trials, although progress with organics, passion fruit and physalis was also reviewed and will be mentioned in this report.

2. FRENCH BEANS

2.1 First trial

The original plan as outlined in the French bean trials protocol of August 2001 was to plant six trials before the end of September 2001. These would cover a total area of 360M² i.e. 60M² per trial. There would be three varieties per trial, Paulista, Amy and Samantha at 20M² per variety.

This timing was delayed, mainly due to the time it took to obtain and import the seed into Rwanda and also the trial configuration was changed due to the lack of availability of six trial sites at short notice. Therefore, the result was that 360M² was planted on October 17th divided equally into the three trial varieties and three individual plots per variety, but only on one site and not split between six sites as originally planned.

There were a number of problems associated with the planting of this first trial;

- The recommended planting density of 25 plants/M² was not followed, resulting in a very low plant population of approximately 15 plants/M². It is essential for good French bean yields to achieve a higher population.
- Although there was some animal manure applied, there was no additional NPK in the seed bed and up to the time of the visit on 16th November no additional fertiliser had been applied. This resulted in stunted unvigorous plants whose leaf size was far too small. As an emergency measure it was recommended to apply 200kgs/ha of 17:17:17 and 50 kgs/ha of urea. This was subsequently done on November 20th.
- The marshland sites will probably be excellent in the drier periods of the year, but are probably unsuitable during the rains. On visiting the site in November the trial had already suffered from up to four hours of rain per day for the previous fourteen days. This compounded the fertiliser problem and the plants were showing signs of poor root development. French beans will not tolerate “wet feet”, although it was interesting to note, that as is the case elsewhere, the variety Paulista, being a naturally more vigorous variety, was standing up to the conditions better than either Samantha or Amy. Unfortunately Paulista, being a

bobby / fine variety is the least likely of the three to be suited to the high quality extra fine / fine market that Rwanda needs to aim for in order to make a viable return. It was also interesting to note, that where there had been a heap of organic manure in the corner of the field prior to planting, the plants were showing much better health, indicating that although wet soils were an issue, at this stage nutrition was the primary issue.

- It may be necessary in the future, when planting in the marshlands, to prepare raised beds and plant on the top of these. This is commonly done elsewhere in wetter and heavy soil conditions and helps keep the roots drier, which promotes better plant health.

On the positive side there was little sign of leaf diseases during the November visit, although there was a very low level of rust. This usually is the primary pathogen that occurs in french bean production, especially in wet conditions. However, there was some indication of root disease, this almost certainly being caused by the wet conditions. There was also little evidence of insect pests or nematodes.

During this first visit disease and pest control options were discussed in the light of what is currently available in Rwanda. On that basis it was recommended that copper, which suppresses most of the serious bean leaf diseases should be sprayed weekly, but ensuring that a seven day pre-harvest interval (PHI) is observed. For pests it was decided to spray the pyrethroid, Karate, but only when pests were observed i.e. to scouting and observing a three day PHI.

Subsequent to the first visit, it rained virtually every day until the end of the trial, the trial site even being covered in flood water at one stage. This resulted in almost the total loss of the Amy and Samantha and fairly poor quality Paulista production. This meant that one of the original primary objectives of this trial, which was to send product samples to European customers was not possible.

So what was learnt from the first trial? It was unfortunate that the weather was so poor and that heavier rains than normal for the time of year fell almost throughout the trial period. However, a number of important lessons were learnt by the sponsor, the farmers and indeed by ADAR. The main point being that there are no short cuts in french bean production. All agronomic parameters have to be correct in order to achieve an economic yield of high quality pods i.e. the fertiliser regime, the climate, the soil preparation, the pest and disease control and varietal selection.

2.2 Second trial

As was originally proposed in the August trials protocol, a second trial was planted with the same three varieties as the first trial. However, again the planting was behind the original schedule, as it was decided to plant closer to the end of the normal rains period i.e. in December, thus avoiding most of the rain. The second trial was, therefore, planted

on December 11th. This trial was then visited by the horticultural specialist on January 5th 2002.

At the time of the visit it was still raining most days, but plant health was still good, beans being able to withstand wetter conditions earlier on in the crop cycle. A number of improvements over the first trial were evident, particularly with regard to planting density and nutrition, with 17:17:17 having been applied at planting, and the crop was much more vigorous than the first trial was at the same crop stage. However, there was some problems with both cutworm and bean fly and it was suggested that the trial be sprayed immediately with Dursban (chloropyrifos), if it was locally available. If it was not available, a heavy drench of Karate, aimed at the base of the plants, would have to suffice. There was also signs of anthracnose, although few signs of leaf rust and it was suggested that Dithane be applied as soon as possible. However, it should be noted that a PHI of 28 days should be observed for Dithane and as in the first trial, sprays closer than 28 days to harvest should be with copper, which only has a 7 day PHI.

The final recommendation was to apply a second application of 17:17:17 in the week of January 14th at a rate of 200kgs/ha.

What was already evident from the second trial, was that already Amy was showing slightly less vigour than Samantha and much less vigour than Paulista. On this basis varietal recommendations were made for future trials.

2.3 Third trials

On the basis that;

- Agonomic lessons are being learnt from the second trial
- The sponsor/farmers/ADAR have to be in a position to make definitive decisions about the future of French bean exports before the next export season
- We may need more substantial trial samples
- Post harvest handling systems have to be tested, and
- The airfreight situation will improve with DAT (son of Sabena) re-introducing flights to Kigali

It was decided to continue immediately with a third and larger trials series. A larger trials series was originally scheduled in the trials protocol for planting between February 10th and 22nd and it is proposed that this is brought forward, to try and avoid as much of the next rains period as possible.

It was also suggested that the variety Amy be dropped from these trials and that two new varieties, Lexus and Teresa be introduced. Arrangements are being made to import these into Rwanda from Kenya and as soon as they arrive the trials should be planted. Both of these varieties are new and are currently under commercial testing in Kenya and are exhibiting certain advantages over those in current usage. Lexus has the vigour of Paulista, but is more leaf rust tolerant and early indications are that it produces a much higher quality bean than Paulista. Teresa's main advantage is that it is very rust tolerant, although its bean quality is still unproven.

Discussion were held with both the sponsor, Mr Alphonse Nyaruhirira and ADAR as to the size of this trials series and it was decided that there should be at least six trials, but no more than ten. Individual trial size should be 400M², 100M² for each of the four varieties, Samantha, Paulista, Lexus and Teresa. The decision on size was based on;

- What ADAR and the sponsor, thought they could successfully organise
- The need for bigger areas so that larger commercial samples could be obtained
- The need to involve more farmers as a springboard for future commercial production, and
- The production volume it was thought could be easily sold on the local Kigali market

2.4 Summary of french bean trials progress

The original August 2001 action plan is copied in Table 2.1 with an extra column to indicate progress. To summarise, all actions have been covered except for;

- Production costings and gross margins. This is in progress within ADAR and should be completed by the end of January.
- Select packaging type and supply source / Purchase and delivery of trial shipment packaging. This is currently being organised by ADAR.
- Field training on product standards and packaging. This can only and will only take place when there is good product to pick, grade and pack.
- Trial shipments and trial shipment follow up. Same comments as above

Other comments, based on the experience to date, would be;

- Is seven month production i.e. October to April really feasible given our experience with the weather to date?

- With the need to organise the picking and packing of a series of high quality samples from the third trial series, would it be possible to employ an experienced short term consultant to fulfill this role? This person could also perhaps be available for the commercial start up in the 2002 / 2003 export season, if the shipping trials are a success and if it looks like a viable business proposition. It is suggested that a Belgian, Marc Wauters, if available, be employed to fulfill this role, which he has done successfully both in Egypt and in Uganda. Marc has a long experience with this crop and in the region.
- We need a business plan as soon as possible, so that informed decisions can be made about a commercial start-up in the 2002 / 2003 export season i.e. plantings from August for October exports. The key points here will be the sensitivity of the venture to both airfreight costs, which typically represent up to 65% of the direct cost of a vegetable export venture, and to market prices. The latter are currently being investigated by Peter Jaeger, but more detail is required.
- Who is tracking the future plans of DAT? As the viability of french bean exports will almost certainly depend on the re-introduction of this direct European service, freighting via Nairobi probably being too costly and most Rwandan freighter services being too unreliable or infrequent.

Table 2.1: French bean action plan August 2001 & progress January 2002

ACTION	COMPLETED BY	ADAR Cost share	Persons involved and time input – days				PROGRESS JAN 2002
			JC	JR	ADAR	SPONSOR	
Find and select exporter	16/9/01				**		Yes
Select participating farmers for production trials	16/9/01			** 1		**	Yes
Select trial cvs. & organise seed supply to Rwanda	16/9/01	**	** 1	** 0.5	**	**	Yes
Distribute seed to farmers and plant first trials	30/9/01			** 2		**	Yes
Production costings and gross margin calculations	31/10/01		** 2	** 2	**	**	In progress
Market contacts	31/10/01		** 1			**	Yes
Select packaging type and supply source	31/10/01		** 0.5	** 0.5		**	In progress
Purchase and delivery of trial shipment packaging	30/10/01		** 0.5	** 0.5		**	In progress
Ensuring correct docs, phyto, EUR1 etc	30/10/01			** 0.5		**	Yes
Airline discussions/ negotiations	30/10/01		** 0.5	** 0.5		**	Yes
Recurring trial visits to monitor progress	Continuous		** 2	** 5	**	**	Yes
Field training on product standards and packing	30/11/01		** 0.5	** 2	**	**	No
IF ALL OK THEN - -							
Trial shipments	30/11/01		** 3	** 3	**	**	No
Trial shipment follow- up	30/11/01		** 0.5	** 1		**	No
CONSULTANTS TIME INPUT			11.5	18.5			

3. PASSION FRUIT AND PHYSALIS

On both of the consultants trips to Rwanda, visits and meetings were held with a number of passion fruit and physalis farmers and exporters or potential exporters. On the basis of these visits, plus other visits earlier in 2001, plus work undertaken by ADAR staff, it has been established beyond reasonable doubt that there is sufficient production of both physalis and passion fruit to start a viable export enterprise. This is especially so since in the past there have been successful exporters and indeed even now there are still some exports being made.

An action plan was drawn up in August 2001, which is shown Table 3.1 together with an added column showing progress to date. This has been slower than planned, to a large extent due to delays in the market sampling process. It was decided in November that samples would be sent to a variety of European exporters as the first stage in starting a flow of reliable high quality exports. This sampling process seems to have been to some extent still born – why? For instance, the main German contact that was identified, is still waiting for samples some two months after he was first contacted. This is no way to engender confidence with European importers.

In no way in this a criticism of ADAR, but perhaps a comment on the seriousness of some emerging exporters. If samples are promised they must arrive, no excuses and if help is sort to identify cheaper packaging suppliers in Kenya and help offered, it does not seem a lot to ask to get the requested packaging sample on time. Potential exporters have to be made to realise that there is only so much the project can do, they have to also be completely involved with the process. It is not the projects job to do everything on their behalf, whilst they concern themselves with other matters.

However, it is also clear that the key requirement for the establishment of successful enterprises in this sector is training. A training needs assessment is essential and should focus on such issues as proper selection of planting material, propagation techniques, pruning, soil conservation - especially planting on the contour, harvest and quality parameters and other aspects of post-harvest handling. It is hoped that Anne Turner who, given her past experience is ideally qualified to undertake such a task, will be contracted to ascertain the precise training needs and then plan and conduct training programmes. It is only through training that a consistent high quality product will arrive in Europe, which is the only way that there will be a sustainable future for exports in this sector.

Table 3.1: Passion fruit/physalis action plan August 2001 & progress January 2002

ACTION	COMPLETED BY	ADAR Cost share	Persons involved and time input – days				OVERSEAS CONSULTANT	PROGRESS JAN 2002
			JC	JR	ADAR	SPONSOR		
Find and select exporter	30/9/01				**			Yes
Market contacts	30/9/01		** 1			**		Yes
Production costings and gross margin calculations	30/0/01		** 0.5	** 2	**	**		No
Supply survey – prices, seasonality, volumes	30/9/01			** 4	**	**		Yes
Select packaging type and supply source	30/9/01		** 0.5	** 0.5		**		In progress
Purchase and delivery of trial shipment packaging	14/10/01	**?	** 0.5	** 0.5		**		In progress
Organise growers and suppliers	14/10/01			** 4		**		Yes
Field training on product standards and packing	14/10/01		** 0.5	** 2	**	**		No
Ensuring correct docs, phyto, EUR1 etc	14/10/01			** 0.5		**		Yes
Airline discussions/ negotiations	14/10/01		** 0.5	** 0.5		**		Yes
EU market survey – prices, trends, volumes	14/10/01						** 5 Peter Jaeger	Yes
IF ALL OK THEN --								
Trial shipments	28/10/01	**	** 0.5	** 2	**	**		No
Trial shipment follow- up, including payment and cash repatriation	28/10/01		** 1	** 3		**		No
Organise supply schedule	11/11/01			** 1		**		No
CONSULTANTS TIME INPUT			5	20			5 – no travel	

4. ORGANICS

Most of the comments made in the previous section also apply to organics, as at least in the start-up phase the same products will be involved. However, the primary requirement with organics is to complete the certification process. Without this there will be no expansion of certified organic exports. It should be remembered here that the project is only, in effect, trying to re-certify one previous exporter and newly certify two others. However, these do need to be treated as separate enterprises, even though it will be more expensive. Joint certification will work until the day that one of them has a problem and then they would all lose their ability to export. ADAR has helped prepare the certification paperwork and it only now remains to help with paying for the actual certification. The current proposal is for ADAR to cost share with the exporters in Year 1, 25% to the exporters and 75% to ADAR, which would then be 50:50 for re-certification in Year 2. This needs to happen as soon as possible, but in the interim sampling can take place and also the planned visit to Biofach in Germany could be a useful part of this process, but only if there is serious follow up after the show by the exporters.

The original organics action plan and progress to date is shown in Table 4.1 To a large extent progress has been delayed by the ADAR funding restrictions mentioned previously and, therefore, the projects inability to help with the certification process. It is believed that these funding restrictions have now been removed and certification can now progress. This needs to happen quickly so that follow up from Biofach with certified organic produce can be fast.

5. SUMMARY

Progress to date with the three action plans has been slower than originally planned. However, the Butare french bean trials are progressing, as are other initiatives with both physalis and passion fruit. The key action points in order to accelerate progress are;

- Organic certification
- Product sampling
- Training needs assessment and training plan
- Obtain more detailed french bean market data from Peter Jaeger
- Business plan for French beans
- Tracking DAT's plans
- Obtaining trial shipment packaging

As a further follow up, the next visit is planned for February 9th – 11th, which will be 9 weeks from the second trial planting, a time when the trial should be coming into peak production. The intention, therefore, will be to prepare trial samples for shipment of extra fine bean and fine bean samples or at the very least demonstrate how to do so. At the same time progress on the third trial series and french bean business plan can be reviewed.

Table 4.1: Organics action plan August 2002 & progress January 2002

ACTION	COMPLETED BY	ADAR Cost share	Persons involved and time input – days				OVERSEAS CONSULTANT	PROGRESS JAN 2002
			JC	JR	ADAR	SPONSOR		
Find and select exporter	16/9/01				**			Yes
Market contacts	16/9/01		** 1			**		Yes
Production costings and gross margin calculations	16/0/01		** 0.5	** 2	**	**		No
Supply survey – prices, seasonality, volumes	16/9/01			** 4	**	**		Yes
Select packaging type and supply source	16/9/01		** 0.5	** 0.5		**		In progress
Organics certification	30/9/01	**	** 0.5	** 3	**	**	** 3	In progress
Sector organics consultancy visit	30/9/01		**	** 5	**	**	** 5	Yes & ongoing
Purchase and delivery of trial shipment packaging	30/9/01		** 0.5	** 0.5		**		In progress
Organising growers and suppliers	30/9/01			** 4		**		Yes
Field training on product standards and packing	30/9/01		** 0.5	** 2	**	**	** 2	No
Organics seminar	30/9/01			** 0.5	**		** 1	No
Ensuring correct docs, phyto, EUR1 etc	30/9/01			** 0.5		**		Yes
Airline discussions/ negotiations	30/9/01		** 0.5	** 0.5		**		Yes
IF ALL OK THEN --								
Trial shipments	14/10/01		** 0.5	** 2	**	**		No
Trial shipment follow- up, including payment and cash repatriation	14/10/01		** 1	** 3		**		No
Organise supply schedule	28/10/01			** 1		**		No
CONSULTANTS TIME INPUT			5.5	28.5			11 + 2 travel + 3 report Total 16	