

## **Comments on: The potential of tapping palm trees for animal production by C. Dalibard**

**From Khieu Borin <borin@forum.org.kh>**

### **Comments on the Potential of Tapping Palm Trees for Animal Production (Sixth paper)**

*Do you know other examples where palm sap, syrup or sugar is used for animal feeding?*

Palm sap has also been used for cattle feeding, especially for the animals used for draught power. Sap is poured over rice straw and after the juice has softened the straw, it is fed to cattle. Sometimes rice straw is put close to the stove when condensing sugar syrup and the white mass (scum) floating on the surface is collected and poured on rice straw. This also serves as feed for cattle. The other common practice by the Cambodian farmers is that after having taken the soft part of the fruits for human consumption, the rest is chopped in slices to feed to cattle. Also the mature fruits are used for animal feeding.

*Is tapping a practical technology for exploiting palm trees considering the risks and the labour involved?*

It is true that tapping sugar palm trees requires a lot of work (13-16 hours per day including getting fire wood, climbing, carrying juice to the stove, boiling, cleaning, etc...) but it is a valuable product which generates income for the poorest farmers and it is better than staying at home having nothing to eat. It is the tree for the poor. I mean this because I have rarely seen rich farmers climb palm trees. During the dry season, from November until June-July, sugar palm juice collection is a common activity. However there is a problem of obtaining fire wood. I have seen one region where the juice is being collected all the year around. Until today which is already close to the dry season (normally palm sap collection period) some farmers still obtained an average 5kg of sugar syrup per day. This is possible because those farmers live close to the big rice mill where they can obtain cheap fuel (rice husks) to condense the juice. Regarding the risk, there is a problem to climb trees during the

rainy season because palm trees become a little slippery so the climbers are very careful in this period. And the only risky time is when the climbers stick the bamboo stairs to the palm trunk. The most important point of tapping the palm tree is that the tappers consider the work is an ART in which they can play around with the inflorescences as most of us playing or working on the computer.

*Are there prospects for tapping palmtrees for animal feeding in your country? Is it a profitable alternative compared to other present uses such as production of fresh juice, sugar, alcohol for human consumption?*

At least 30 out of 100 families in a village collect palm sap. Considering that a family is able to collect juice from 20 trees, it will be 3,000 kg of fresh juice or equivalent alcohol per day in a village. Therefore, there are only two ways of keeping palms in production that is condensing the juice as sugar syrup or feeding it to livestock. As I have mentioned earlier, condensing juice faces a major constraint either because of the required fuel or because it is a non-profitable business. Furthermore, the cost of damaging to the environment should be considered.

I have done a study last year financed by the SAREC M.Sc course which demonstrated that feeding palm juice to pigs was more profitable than condensing sugar when fire wood needed to be purchased. 4 of the 7 farmers lost money by making sugar and the most important thing is that the highest profit from making sugar is still lower than the lowest profit from feeding pigs. The profit will be higher when the price of weaned pigs (15-25 kg) will decrease. Presently, there is a lack of sows: the belief through generations is the main cause for non-saw keeping. The other problem is the high price of protein supplement. But in the present study financed by IFS, some results have shown that pigs like cow peas silage (aerial part) and there is no palatability problem. So this could be an alternative of protein supply which makes the livestock production more attractive and profitable. And the next study will be the impact of cow peas on soil fertility.

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**From Francisco A. Moog <famoog@globe.com.ph>**

**Comments on tapping palm trees for animal production (Sixth paper)**

I found the paper interesting. However, in most areas where palm tapping for juice is going on, it may be difficult to compete against the traditional product the juice is intended for. I tried in a small way to persuade farmers in an area where coconut juice is used to produce rum (a native alcoholic drink called "lambanog") to feed juice to pigs but nobody would like to do it even if I have to pay for the value of the rum that will be produced from the juice, as it will interfere with their operation: they have to clean daily the bamboo tube used in collecting the juice.

Right now, I am in another area where the juice is made into vinegar. This product is not as expensive as the rum and the farmer is not tapping as many numbers of trees as those in the "rum area". The farmer is now cooperating with me to supply the juice for a feeding trial and of course I have to pay for the value of the juice.

There could be a place for palm juice feeding, we just have to look for the right socio-economic setting.

Let's have the alternatives when prices of rum or vinegar, in the case of my examples, drop.

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**From Khieu Borin <borin@forum.org.kh>**

**Comments on tapping palm trees for animal production (Sixth paper)**

I think it is good that Francisco Moog is trying to look for alternative feeds for livestock production, feeding coconut sap to pigs. Maybe he will obtain good results from economic and animal performance as he would like. But the later results of the trial cannot be properly used by farmers, because farmers do give much interest on what is being done as previously mentioned. According to my experience, what is done together with farmers will always remain in their memory (bad or good). As an example the politicians in Cambodia use to go to the countryside with

gifts when they have meeting with farmers, but next time when other people prepare a meeting without gifts there will be no participants.

Therefore, according to my experience I would rather first select the right farmers (they can be 2-3). I would tell these 2-3 farmers the clear objective of the trial and that they choose the rest of participants. After this, we will organize a meeting with all participants. I have done trials with sugar palm juice feeding to pigs 3-4 times, but I never provide even credit for what is available in the farm (palm juice and vegetable). This will greatly influence the impact of the results.

I am now doing other trials in other areas of the country and again I do not provide credit for palm juice and they do not even ask me for that. I hope that the participants will contribute more comments on this matter and I think this is a key point for future research and development.

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**From Brian Lowry <b.lowry@dance.tap.csiro.au>**

**Comments on sugar palm trees**

*Do you know other examples where palm sap, syrup or sugar is used for animal feeding?*

It might be worth mentioning that some of the starch-yielding palms may carry considerable quantities of soluble sugars in the pith. In the normal processing to obtain sago flour (disintegration of pith and sedimentation from water) this is totally lost. If however the whole pith is fed to livestock this waste would not occur. The sugar content appears to be highly variable. We published on this in : J. Sci. Food & Agric 37: 352-358 (1986); E. Wina, A.J. Evans and J.B. Lowry; "The composition of pith from the sago palms *Metroxylon sagu* and *Arenga pinnata*".

*Dr Brian Lowry, Principal Research Scientist CSIRO Division of Tropical Animal Production Long Pocket Laboratories, Private Bag No. 3, Indooroopilly, Queensland 4068 phone 07-32142840 fax 07-32142882*

**From Frands Dolberg <frands@citechco.net>**

**Comments on Khieu Borin's comments on tapping palm trees for animal production**

Borin writes: *"Therefore, according to my experience I would rather first select the right farmers (they can be 2-3). I would tell these 23 farmers the clear objective of the trial and that they choose the rest of participants. After this, we will organize a meeting with all participants. I have done trials with sugar palm juice feeding to pigs 3-4 times, but I never provide even credit for what is available in the farm (palm juice and vegetable). This will greatly influence the impact of the results."*

I have the same experience from my own on-farm work in several countries (Bangladesh, Mauritius, China, India....). It is very much a question of attitude and confidence. If these are in place, it is quite a lot that can be done together with farmers.

*Frands Dolberg*

**From Rena Perez (71055.111@compuserve.com)**

**Comments related to tapping palms**

I grew up in upper NY State where my brother and myself used to tap maple trees for sap and boil it down to maple syrup, ratio of 32 to 1. At that time we used a bit to open a hole in the trunk and attach a piece of metal (combined bucket holder/funnel arrangement). However, all that has now changed, the last time I saw sap being collected, the trees reminded me of a description of INTERNET, they were all joined together with thin plastic tubing, which I was told, remained in place year round. Some time ago, when Dr. Preston was in Cuba, he mentioned the ordeal of having to climb the Borassus trees and do the cutting twice a day in order to collect the juice, I mentioned the possibility of considering applying the maple collection technology. I wonder if a similar approach has been tried on Borassus or other palms. Maybe for the palm wine producers, the INTERNET technology would make economic sense. Dr. Preston (and others!) might like to comment.

*Rena Perez*

**From S. Bellon <bellon@avignon.inra.fr>**

**Comments on Khieu Borin's comments**

I do support Frands Dolberg's comments on issues raised by K. Borin. I recommend him to refer to the paper Castellanet & Bellon, 1985: "Training, Research and Development in Dominica (West Indies): pig raising development in South Eastern District (a case study)", In Caribbean Farming Systems and alternatives for development (colloquium held on May 9th to 11th 1985, University of the French West Indies and Guyana). UAG/DAC Ed. (BP 810 - 97174 Pointe a Pitre Cedex-Guadeloupe). pp 157-170. K. Borin will have an example on how on-station and on-farm experiments can be associated. The paper also shows how farmers collaboration can be boosted and benefit to an iterative research (action oriented) process.

*S. Bellon, INRA, France*