



# APEF

## NEWSLETTER N° 2

18-01-2011

Association for the Promotion  
of Leaf Concentrate in Nutrition \*



## TAKING STOCK OF THE SITUATION ...

Last year we wrote that the prospects for the development of leaf concentrate had never looked so promising. This was partly thanks to the fact that the marketing of leaf concentrate as a human food had just been authorised in Europe, and also due to the increasing awareness of the need for more careful and efficient resource management if we are to feed an estimated world population of 9 billion people in 2050.

However, in real terms, no profound changes have taken place. In the agricultural and food industry sectors, even though the 2007/2008 crisis initiated interest in an approach to development embodying more solidarity, sustainability and concern for consumer health, it would seem that, on the whole, we are rushing headlong into an increasingly precarious situation.

### *The challenge for the future :*

In a world already struggling to feed itself, the forecasts for the year 2050 are as follows:

- An increase of 30% of the world population by 2050.
- An increase of 100% in farming output (both food and non-food crops).

Is such output feasible? And how can the difference in figures be explained?

### *The answers probably lie within the questions themselves:*

These forecasts relate not only to the increasing world population, but also to the following three, often competing, categories of need:

1. those linked to (human) food production
2. those linked to (animal) feed production
3. those linked to the growing of biofuel crops

This explains the more rapidly increasing demand. In addition, of the solutions put forward, those based on intensive farming and high inputs from the chemical industry tend to damage the soil and are often unsustainable, while such farming practices are often carried out with export in mind, and production is not available to local populations. Above all, the demand for cattle feeds and biofuel is rising faster than the demand for crops grown for direct human consumption. Nearly 40% of the world's cereals are already grown for cattle, and this despite a very low 'nutritional return', leading to losses of between 75 and 90% of the energy and protein produced by plants!

Thus, achieving the objective of doubling farming production by 2050 is by no means guaranteed, and we will have to choose between feeding the world population and devoting agricultural resources to the cattle farming and biofuel sectors at an ever-increasing rate.

Furthermore, rural exodus is making matters worse, as poor urban populations are more exposed to rising food prices than self-reliant rural populations.

## THE POTENTIAL OF LEAF CONCENTRATE

The world food supply is precarious and increasing demands will be made of it. What's more, the price of food commodities is particularly vulnerable to climate variations and market speculation, which can lead to wild fluctuations. Production zones do not match areas of needs. The planet is chronically food-insecure and, as a result, one billion people are currently undernourished. This number is sure to rise.

Our association is aware of the need to return to more sensible models of production and consumption. Production gains, whether based on traditional or innovative methods, must place less pressure on resources and the environment. They should also contribute towards strengthening the resilience of rural communities.

**Leaf fractionation**, the process by which leaf concentrate is made, is one such approach:

- From a production point of view, in developing countries in particular, this method can significantly improve overall nutritional yields of the farming/cattle rearing tandem, while moderating its present evolution towards industrialisation and the controversial practices associated with it: monoculture, overuse of chemical fertilizers and herbicides, GMOs/glyphosate systems, questionable treatment of livestock etc. Making traditional smallholdings more efficient and profitable can also help preserve the social fabric of rural communities, whose present disintegration is the main cause of the dramatic growth of shantytowns around large cities.
- From a consumption point of view, the technique of leaf fractionation offers access to an almost unlimited source of vegetal protein and micronutrients, the nutritional advantages of which compare favourably with those from animal sources, health advantages adding up to environmental benefits.

The concept proposed by APEF will help promote a natural balance between crop production and livestock farming in traditional smallholdings. In fact, this balance is critical to successful outcomes and profitability in leaf concentrate projects generally.

## APEF ACTIVITIES IN 2010

*Our present areas of work :*

**1. Monitoring current nutritional programmes**, in which French-produced alfalfa concentrate is distributed in various forms:

- 'Soynica' in Nicaragua (our first partnership, launched in 1994)
- The 'Franco-Mexican, Swiss and Belgian Charitable Association' in Mexico
- 'Enfants du Monde' (Children of the World), in Burkina Faso, Madagascar and Senegal
- Food donations to people living with HIV and AIDS in Benin

Below is a short introduction to the work of the Mexican 'Beneficencia'. We will be telling you about other projects in subsequent editions of APEF-INFO.

Founded in 1841, this association is responsible for the largest leaf concentrate distribution project in the world. Amongst other activities, it provides nutritional assistance to over 15000 malnourished children on a daily basis, working with 54 establishments (schools, orphanages, community centres etc), not only in Mexico City but also in neighbouring states. Every day, children receive the equivalent of 5 grams of leaf concentrate incorporated in various snack preparations.



To widen the variety even more, the association is presently developing a leaf concentrate biscuit, which seems to be going down very well!

Each child is closely monitored and results show without a doubt how effective leaf concentrate is against malnutrition and anaemia. The organisation's management is extremely pleased and is looking forward to reaching 25000 recipients next year.

**2. Medical trials.** We are currently concentrating our efforts on helping people living with HIV and AIDS. Aside from the direct benefits for HIV positive patients, demonstrating the nutritional effectiveness of leaf concentrates in this specific circumstance will help establish its merits in the broader context of malnutrition. Following on from the very encouraging results of our trials in Cameroon and Burundi, we are working closely with Professor Bertin, nutritionist at the University Hospital in Reims, and with the 'Order of Malta' at the Djombe Hospital in Cameroon on a new trial. Though relatively small-scale, the study will be conducted rigorously and we hope to be able to publish the results in a reputable scientific journal.

**3. Research into the integration of local production units within various socio-economic contexts.** Leaf fractionation is only viable when it can be incorporated into an existing crop and livestock farming system (with due consideration for its particularities) in order to optimise its various components: increased protein and micro-nutrient yields, soil enrichment and improvement in the quality of animal feed thanks to the leaf concentrate by-products (press-cake and whey). The production of leaf concentrate also offers novel opportunities for local small businesses (leaf concentrate products for schools, health services and the general public).

APEF is also currently supporting a local leaf fractionation project in Senegal.

This highly promising initiative involves the careful consideration of numerous constraints and opportunities: seed selection according to season and type of soil, availability of farmland, authorisation from the local authorities, assessment of the potential market for leaf concentrate products, valuation of the by-products, decisions regarding procedures and equipment suited to local conditions etc... The planned crop rotation will consist of two successive legumes followed by rice. Trials are underway. By-products will be fed to dairy cattle.



This project coincides with the action by 'Enfants du Monde' in Senegal. Today the association distributes leaf concentrate 'as is' to over 800 schoolchildren. It is also actively involved with pregnant women and breastfeeding mothers (250 at present) with excellent results (healthier infant birthweight and spectacular rise in the quantity of breastmilk).

Following the European authorisation, 'Enfants du Monde' has also been granted by the Ministry of Health permission to distribute leaf concentrate in Senegal.



Meanwhile, APEF is involved in the improvement of small extraction equipment (pulping, pressing, coagulation, decantation, drying) and methods to maximise leaf concentrate by-products at various scales of operation (group of families, village and intermediate production). To this end, partnerships have recently been established with 'PolyTech Lille' and the 'Ecole Centrale de Lille'.

As alfalfa is not suited to all climates or soils, this year APEF has begun studying the nutritional qualities and growing performances of other species, too. Cowpea is top of the list - this annual legume is both edible and grown in many tropical countries already.

APEF puts local production first, wherever possible. However, large-scale industrial production (for example, as in the Champagne-Ardennes region of France) can play an essential role too. Indeed, the cultivation of leaves is impractical in a number of arid countries.

Needs in towns will be considerable and will often require resorting to imports. Even if, generally speaking, United Nations agencies and major NGO's give priority to supplying locally, they will also require large and steady quantities of a standardized quality. The day when the concept becomes widely known, the mobilisation of all possible stakeholders will be required. Setting up local production will help to achieve the necessary recognition. For the time being, the essential point is to maintain a steady supply of a quality product for all users (including for trials and research) in spite of the various difficulties. This is vital for the future development of the concept.

**4. Incorporating leaf concentrate into the diet :** To date, APEF has focused mainly on the distribution of leaf concentrate and on the demonstration of its nutritional benefits. In both instances, the association has dealt with the 'raw' product in powder form. We have also promoted this 'raw' product to the United Nations and large NGO's. Today, although some of our partners have persuaded children to take the product happily 'as is' with a teaspoon (for instance, 7000 children in Burkina Faso are receiving it in this way at an unbeatable price), we want to go one step further and address children's energy deficiencies as well. For them we are working on the design of ready-to-use products incorporating leaf concentrate (e.g. snacks such as biscuits or cereal bars) that we are trying to formulate with local ingredients, whilst targeting specific nutritional needs and production costs that families can afford. We are currently working on various versions of a leaf concentrate sandwich biscuit, in partnership with 'PolyTech Lille'.

Once we have achieved some satisfactory products, the next logical step will be to compare them with equivalent formulations already on the market, by subjecting them to clinical trials. We hope to reach that point soon.

With time and experience, we will be looking to develop ready-to-use foods that meet the requirements and specifications of UN agencies such as WFP or UNICEF, or major NGO's, who are likely to be more interested in 'turn-key solutions' than a 'raw material' such as leaf concentrate.

*To reach its targets, our association is always looking to broaden its skill-base and resources in various areas (human and animal nutrition, agronomy, technical equipment development, project management, graphic design and web design, public relations and translation etc).*

*If you have any of these skills or experience and some free time to devote to our work, we would be grateful if you would contact us by email at: [fcr270@yahoo.fr](mailto:fcr270@yahoo.fr) or by phone on: 0033- (0)4-74-90-77-22 to talk further.*

*You can also help us by making a donation. Your support is essential, in particular to carry out the planned clinical trials, which are very costly. If you wish, you may send your donation to the APEF treasury at the following address: Bernard LECLERCQ 14 rue Chantereine 51140 TRIGNY. Téléphone 06-71-82-53-60, email : [leclercq.bernard@wanadoo.fr](mailto:leclercq.bernard@wanadoo.fr)*

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