THE DOMESTIC METHOD OF MAKING YOUR OWN LEAF CONCENTRATE

Sister Luci Morren, President of SOYNICA, teaches Nicaraguan mothers to make for themselves the leaf concentrate (LC) needed by their families

- **from the leaves of local plants (especially those of vegetables)**
- **by a simplified process of extraction called 'the Domestic Method' (Annexe 1)**

APEF knows very well how to make dried LC from Lucerne (*Medicago sativa*) and how to use it in supplementing deficient diets. But Lucerne, queen of plants as a protein producer, doesn't thrive in acid soils, nor in high temperatures; so, in the tropics, it can be grown only at altitude.

However, apart from Lucerne, many plants can be used, subject to certain conditions:

- **the ease of extraction of their protein and**
- **their not having too high a content of anti-nutritional factors.**

LC, when made at home, appears as a moist crumbly cake with very limited shelf life but its nutritional composition is similar to that of the dried LC produced industrially and so the requirements for its use in diets are the same ON A DRY BASIS, (Annexe 2). In this form it is easily blended into moist or liquid mixtures.

RECOMMENDATION

Up until now APEF has worked with Associations and NGOs which have distributed Lucerne LC sent from France. Faced with urgent requests from many friends anxious as soon as possible to make LC locally, APEF will, from now on, popularise the domestic method advocated by Sister Luci in Nicaragua; but we need the collaboration of users in other countries in order to develop this process in different contexts.

We have listed in Annexe 3 a number of plants recommended by others but of which we have no direct knowledge; so we would like to gather your information and experience in order progressively to improve this list so that as many families as possible may benefit from it.

ANNEXE 1

The eight steps of the production process

1. **Gather the leaves: Use very young leaves, before, or just after, the plant starts flowering. Choose tender leaves, rejecting any that are tough or dry. Immediately after harvest start the following steps.**

2. **Wash the leaves in clean water to remove mud or dust and foreign objects.**

3. **Sorting: strip away any tough stalks by hand or with a knife. Shred the leaf blades to make pulping easier.**

4. **Pulping: This is the most difficult bit. The best way is to use a kitchen mixer, if available, or an electric grinder. Otherwise use a manual meat mincer or even a pestle and mortar. A little extra water may be needed to help leach out the protein, but often the residual surface water from the washing is enough.**

5. **Pressing: Wrap the pulped leaves in a previously moistened cloth and use convenient objects – stones or boards – to press the pouch as well as possible, catching the green juice in a suitable vessel. The pressed residual fibre is excellent food for herbivores.**

6. **Heating: Heat the green juice quickly while stirring to prevent it from sticking; slow heating can damage the nutritive value. Coagulation occurs from 45 to 75 degrees C but it is essential to go on heating just to boiling point to achieve three things:-**
   - **the virtual elimination of bacteria**
   - **the minimisation of undesirable components and**
   - **improvement of the texture of the curd, facilitating filtration.**

7. **Filtration: Filter the hot juice through a wet, tightly woven cloth, such as denim or twill, to separate the green curd from the brown juice.**

8. **Pressing: Wring and squeeze, gently at first, to remove as much brown juice as possible; what stays in the cloth is moist green LC. Rich in protein, vitamins and trace elements, it is ready for eating. When it has been adequately squeezed it will peel cleanly from the cloth as you unwrap it and will have the consistency of a crumbly cake.**

ANNEXE 2 - USING MOIST LC

It should be used on the same day as it's made, or, if it can be kept cool, the next day. Otherwise there are the risks of spoilage and fermentation.
It should be mixed with whatever foods are available or incorporated in gruels or drinks.
The moisture content of well pressed curd varies, but it should lie between 50% and 60%. So the daily quantities advised for dry LC (having a moisture content below 10%), i.e. 5 g for children, 10 g for pregnant women and up to 15 g for nursing mothers, need to be roughly doubled.

<u>General rules to follow when using moist LC</u>:

- **Keep it away from sunlight and heat and as cool as possible.**
- **Take it once a day as part of a meal, mixed into a soup, a thick broth or a puree.**
- **Having been cooked as it was made it needs no further cooking; its vitamins are best preserved by mixing it with other things after they have been cooked.**
- **Dilute it in jams, marmalades, stewed or mashed fruit or vegetables and in sweet drinks.**
- **During the first days of weaning, mix a few grams of moist LC in sugar syrup.**
- **For people with anaemia, take Vitamin C, as fruit or fruit juice, for example, at the same time as the LC. The Vit.C will double the absorption of iron from the LC.**

<u>DOSES</u>: - **<u>Children</u> 10 – 12 g per day, i.e. about 2 teaspoons. BUT CHECK the size of the spoons for the weight they contain, and specify 'level' or 'heaped' &c. accordingly !**

- **<u>Pregnant women and nursing mothers</u>: 20 – 25 g per day or more.**

GIVE FIRST PRIORITY to children between 6 months and 6 years of age,
THEN to pregnant women,

to nursing mothers, to improve lactation, and then

to the sick.

<u>N.B.</u> Always start with 3 or 4 g per day, adding a further gram or two a day so that over ten days or so the digestive system will have become accustomed to the LC by the time the full quantity is reached. In the rare event of initial temporary intolerance, extend the period of acclimatisation; split the administration between several meals and gradually build up the dose as the digestive system adapts.

ANNEXE 3 – INTERESTING PLANTS

SOYNICA suggests trying the following, for which we give the Latin or 'scientific' names. 'Common' names vary from place to place and must be sought from a local Flora.

- **Amarathus spp.**
- **Beta vulgaris**
- **Carica papaya**
- **Chenopodium album**
- **Cucurbita maxima**
- **C. moschata**
- **C. pepo L.**
- **Daucus carota L.**
- **Manihot esculenta**
- **Phaseolus vulgaris**
- **Psidium guayava L.**
- **Radicula armoracea**
- **Sechium edule**
- **Spinacia oleracea**
- **Spondias mombin L.**
- **Spondias purpurea**
- **Tamarindus indica**

The English Association, 'Find Your Feet' suggest also, from their experience:

- **Brassica juncea**
- **B. oleracea**
- **Clitoria terneata**
- **Dolichos lablab**
- **Lablab purpureus**
- **Trifolium alexandrinum**
- **Vigna unguiculata**

Note that the Latin name of Lucerne is Medicago sativa and, of course, another very common name for it is 'Alfalfa' !

We should be grateful for your help in commenting on or adding to this list. We also ask you to send us local common names for the above and any others you suggest because these common names vary not only from language to language, but also by country or region in the same language and by dialect or tribal or ethnic group.