

Integration of Natural Medicines with Food Crops in the Home Garden

In REAP (Rural Extension with Africa's Poor) we have been working for many years with small farmers on low input sustainable agriculture. The strategy we have taken is that in order to be relevant for the rural poor, teaching should be based on what people can do for themselves rather than purchased inputs. This therefore links very naturally with our belief in the environmental soundness of low external input agriculture and enables a two pronged approach towards the same end. Most of our teaching is based on replacing purchased inputs with productive knowledge-based family labour for more efficient production. This strategy is also based on the value of productive subsistence, in which farm families benefit from producing quality food for home consumption. One of the main strategies of subsistence production at any level is variety, which both reduces risk and increases the quality of life through what is consumed. We have recently come to learn that productive subsistence relates to much more than just food production and that a mixed farm can satisfy so many more of the family's needs.

Our focus on relevant teaching for the rural poor based on family labour has meant that a significant part of what we are involved in is refocusing existing teaching to make it relevant for those who do not have money. Much sustainable agriculture teaching is linked to wider organic methods. In the 'North' organic produce tends to relate to affluent and to a certain extent luxury markets, where a premium is passed on to the producer. Ideas that have been developed for this sector need to be reinterpreted in order for them to be useful and practical for the rural poor with whom we work. As we have been working on developing teaching relevant for our target audience we have begun to look more and more beyond production to post harvest ideas and use of what is produced, both for value adding but also for greater benefit in the home. This was initially focused on making better use of existing crops already known by farmers, but has extended beyond that as we have seen the potential for this teaching.

In looking at the many uses of existing crops one of the areas that has stimulated most interest has been their medicinal uses. Perhaps the first of these in our teaching was the use of pawpaw seeds for treating intestinal worms and using the latex-laden skin of unripe pawpaws for helping heal 'dirty' wounds. Both treatments are straightforward and easy for people to take up, solving very common and significant health problems. As well as being nutritionally very valuable the fruit also has mild medicinal properties in aiding digestion and as a mild laxative. When we first introduced this teaching a number of years ago we found little interest as many thought it was second best to tablets. However, in recent years interest in medicinal plants has grown enormously and we get a very positive response now when we teach that it is not a second best alternative.

As we have looked further we have found many other crop products having useful health roles such as the hairs of the maize used for urinary infections and the shells of groundnuts used for making charcoal for treating mild food poisoning and diarrhoea. Young leaves of guava, avocado and mango are a valuable source of tannins for treatment of diarrhoea in conjunction with oral rehydration solution, as well as the fruit being very valuable nutritionally, each with particular value. As we continue to explore this important area we find more valuable teaching from the experience of others, and we seek to check it and contextualise it to the needs of rural families.

Other teaching has involved reinforcing what is already available locally and enabling farmers to incorporate medicinal plants into what they do with confidence, and to integrate them practically into other parts of life. For example we have been encouraging farmers to plant a couple of aloe plants close to the kitchen so that if someone gets burnt the gel can be applied immediately.

Having started looking at the medicinal use and health value of existing crops we have expanded our teaching to focus more on the wider value of Natural Medicines at the home level. The concept of Natural Medicines that we use as developed by Anamed¹ is to bring together the benefits of conventional medicine with those of traditional herbal medicines, seeking also to minimise the negative aspects of each. Natural Medicines have the advantages of traditional herbal medicines of being easily accessible and within the knowledge scope of rural populations. We also however believe it is important to bring in scientific understanding of why the medicinal plants work and thus what they treat effectively, the dosages, and any limitations and side effects.

The main channel of our work in REAP is through local churches. Throughout eastern Africa churches abound and reach to the remotest areas. They are an ideal channel for teaching that is relevant and this can be linked to the motivational role that churches can so effectively develop. However, when we first introduced the idea of using Natural Medicines we faced a certain level of suspicion, since many churches have long preached against traditional healers. Since we respect the reasons behind this we have organised a couple of workshops to dig deeply into the spiritual issues and by so doing have been able to release churches to teach freely on natural medicines. In our analysis the main problems that churches have with traditional healers relate to involving 'unhelpful spirits' and the three related issues of fear, power relationships and exploitation. These last three are linked very closely to the secrecy of special knowledge. As we discussed this together in the workshops we agreed that Natural Medicines have none of these problems as they do not involve any rituals and we emphasise the need to share information and to understand the background to teaching. By doing this we have been able to bring freedom and to mitigate against the feelings of guilt that often accompany visits to traditional healers.

As we have researched relevant information on Natural Medicines we have also moved beyond the use of existing crops to actively encouraging the growing of valuable medicinal plants in the home garden. We include medicinal plants in the sustainable agriculture teaching that we are involved in, so as to develop a more holistic agricultural environment. These new medicinal plants are very compatible with existing agricultural environments and in particular with the home garden and fruit and vegetable areas.

Although we do have a distinct Natural Medicines programme within REAP, this programme is closely linked to and overlaps with our other teaching. Many of the plants that we work with can perhaps be more appropriately termed 'Food Medicines', a term that is useful when there is close control on pharmaceuticals. Most indigenous green vegetables for example are nutritionally far more beneficial than introduced and commercially produced temperate ones, and therefore have clear health benefits, especially in relation to treating conditions such as anaemia. We therefore actively encourage them, but we have also actively introduced other nutritionally positive plants in our work.

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Moringa is one of the most valuable plants that we have introduced and encouraged wherever we teach. Initially we started encouraging Moringa as an easy solution to the limited vegetable-growing season dependent on rains. As a tree with a good taproot it produces nutritious leaves both early in the rains before herb vegetables have had time to develop and also into the dry season after the end of the rains. We have also long been teaching the use of Moringa seeds for cleaning muddy water, a very definite health benefit. However the greatest health benefit we have found more recently to be in Moringa powder made from shade-dried Moringa leaves. This powder has excellent nutritional value being very high in Protein, Vitamins and Minerals. A spoonful of Moringa powder added to a starch based meal gives a balanced diet. This makes balanced nutrition accessible to anyone in the hotter areas where Moringa thrives, and has been a real boost for managing HIV/AIDS where affordable nutrition is so important. It is also a very accessible 'cure' for malnutrition, especially in children. Moringa is easy to grow and very compatible with existing cropping systems, easily fitting into corners of the home compound or farm or in a hedge.

Another plant we have found very valuable is Roselle, *Hibiscus sabdariffa*. The herbal tea made from the flower calyces has long been enjoyed in Sudan and Egypt as a refreshing drink, but its value extends far beyond the pleasant and refreshing taste. It has spread fast in Western Kenya recently through our work as farmers have seen its health benefits and the ease with which it can be grown in its preferred environment of hot areas. This is the one crop that does compete for space with food plants, but this has been adequately compensated for by the ease with which it can be prepared and sold in the local situation.

One of the great bonuses of including teaching on Natural Medicines in sustainable agriculture programmes is that they are very compatible with productive subsistence production. They fit well into corners of the home garden, or within specialist niches and microclimates within the farm. Multi-storey systems of agricultural production, which include trees and crops at different levels are particularly suitable for incorporating home medicinal plants.

Together with Moringa and Roselle, the medicinal plant that we have been giving greatest attention to is *Artemisia annua*. This herb has been used for thousands of years in China for treatment of fever. In the last few years Artemisia has been discovered to be very effective in the treatment of Malaria. Although the plant is grown commercially as the source of artemisinin used in the production of the pharmaceutical drugs, the plant itself is even more effective when prepared in the form of a tea. Since there are so many active ingredients in the whole plant, risks of building up resistance are minimal when used in this form. The dosage is straightforward to calculate and herb therefore easy to use responsibly. A few plants grown at home can produce all the treatment needed for the family, and even neighbours, in a very effective manner. It is however a plant that is challenging to grow in the hotter areas where malaria predominates, so good husbandry techniques need to be taught. In order to extend its use to the areas where it is most needed we are developing ways of creating suitable microclimates for Artemisia in the wider farm. One such suitable microclimate is amongst banana plants, another indication of the relevance of the linkages.

Those medicinal plants that have an herbal growth form fit particularly well into a home vegetable garden. Since many medicinal plants such as Artemisia are aromatic they are very suitable for companion planting as the smell confuses those pests that often find their hosts by smell. Artemisia also has another advantage in being very effective in controlling weeds

and is a natural herbicide, even helping to control couch grass. Lemon grass, another very useful and easy to grow and use medicinal plant forms a very attractive border to a cultivated plot, while at the same time helping to repel insects and prevent run off and erosion. The leaves are easy to use in a refreshing tea which has many medicinal properties including bringing down fever.

There are however also some medicinal plants that are not compatible with crops, and which therefore need to be selectively planted away from cultivated areas. Perhaps the most significant and useful of these is the Neem tree which grows into a large tree which affects the land round it so that it is not good for crops. Since it is a very valuable and well documented medicinal tree we encourage the strategic planting of a few Neem trees in places where shade is a benefit, such as in a school compound or near a church. One tree can supply the needs of several families. If planted at home the place should be carefully chosen as a place where shade is needed and where crops are not expected to be grown. It thus has its own distinctive useful niche in the community. It also integrates well with food crops in another way, since most parts of the plant produce an easy to use and safe pesticide.

Our experience with Natural Medicine production at the home level has convinced us that natural medicines are a very important part of the home garden and especially productive subsistence, adding to rather than replacing food crop production. They not only solve important health problems at the family level but even contribute to the overall sustainability of the farm. The integration of food medicines further expands the concept of Natural Medicines as we discover the value of variety in the diet as a result of variety of production.

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