

Oiling the wheels of **groundnut** **production**

By using an improved variety of groundnut coupled with integrated disease management methods, farmers in India's leading groundnut production zones are reducing their losses and producing food and fodder that is free of both natural and chemical toxins. Previously, late leaf spot and rust caused crop losses of more than 70% and groundnut mycotoxins affected the health of both humans and animals.

Thanks to farmer-to-farmer extension and village seed production groups the new technologies have already made a big difference to the lives of more than 10,000 poor farmers, in particular women, in more than 120 villages in India.

Cutting losses

Two leguminous forages, African Dhaincha (*Sesbania rostrata*) for the Boro rice season and Khesari (*Lathyrus sativus*) for the Aman rice season, fit easily into existing seasonal cropping and labour patterns. Scientists produced these technologies by working with groundnut growers - often poor tribal farmers - in the Deccan Plateau in India, the largest groundnut growing area in the world. Two diseases that affect groundnut, late leaf spot and rust, meant that farmers lost more than 70% of the pods, as well as the leaves and stems that they feed to animals or sell as fodder.

To cut these losses, scientists brought in an improved groundnut that does well in the Deccan, where there's low and erratic rainfall and drought in three out of five years. The improved groundnut variety, coupled with integrated disease management, raised farmers' net returns by about 25%. Plus, a continuous supply of healthy fodder made a positive impact on the livelihoods of small dairy farmers.



The improved groundnut cultivar matures early - a very desirable quality for crops that rely on soil moisture from winter rains to grow and ripen - and responds well to integrated disease management. Another advantage is that the improved variety is resistant to mycotoxins which can affect the health of both humans and animals.

Integrated Disease Management means safe food for humans and healthy fodder for animals

Integrated disease management is a technology that is ecologically sound and user friendly because harmful chemicals are used very sparingly and carefully.

In groundnut cultivation, fungicide is only used twice, once to treat the seed before planting and the second time 65-70 days after sowing. This means that the crops are protected from late leaf spot and rust but that any traces of fungicide disperse well before groundnuts are stored or the crop residues are fed to cattle.

Control of late leaf spot and rust has been so successful that both men and women farmers are realising that integrated disease management can be really useful in preventing crop losses. They are now beginning to ask for advice and suggestions for managing other problems, such as collar rot, in similar ways.

Making a big difference to women

Since women are usually responsible for dairying they know very well that poor quality fodder harms the health of their animals and lowers milk production. They know that feeding milking cows diseased groundnut haulms makes them sick - the animals get diarrhoea and refuse to eat, which in turn reduces their milk yield. This affects women's regular source of income from milk sales. For them, less groundnut disease means healthier groundnut haulms - in other words more nutritious fodder - and higher yields of milk, up to half a litre per day per animal.

Making a difference to groundnut production

More than 10,000 farmers are growing groundnuts with integrated disease management technology on nearly 20,000 hectares in Andhra Pradesh and Karnataka. But this is still only a tiny fraction - just 2.5 % - of the total groundnut area. And, at the current rate only 10% of the total groundnut area is likely to be using the new cultivar and integrated disease management by 2011.

Although the improvements are spreading, the bottlenecks are the availability of seed of the new cultivar and the unmet need

for hands-on training in integrated disease management in the villages.

NGOs and self-help groups help close the gap

From the very beginning of the project, it was clear that making sure farmers had seed of the new groundnut variety was going to be critical to spreading the new technology. The answer was to enlist NGOs, who've been involved from the early stages of the project, to help set up village and self-help groups to multiply seed. NGOs also ran field days in the villages for farmers to get hands-on practical experience from other farmers on integrated disease management. From over 2,000 farmers in 2001, the technology reached more than 3,000 farmers in 2003, nearly 6,000 in 2003, and nearly 9,000 in 2004 and 2005.

These village seed and crop protection systems not only spread the take up of integrated disease management more quickly and more widely, but also sensitize farmers and community leaders in nearby groundnut growing areas to the new technologies.

Collective action gets things going

What really helped promote integrated disease management for groundnut in the Deccan was that a whole range of organisations and individuals got together to help - state agricultural universities and their district and village programmes, NGOs, departments of agriculture, extension services, village self help groups and farmers.

The government too did its bit by tackling what was needed at both state and national to implement pro-oilseed trade and marketing policies for groundnut. All these actions by various groups and at various levels helped enormously.

Collective action gets things going

Integrated disease management is applicable to a whole range of fungus diseases that affect crops such as chickpea, peas, lentils and potato, and could help reduce crops losses in Bangladesh, India, Nepal, Pakistan and throughout Asia and Africa.

For more information

For further technical information go to the RIU online database at www.researchintouse.com/database and type in **CPP15** or email riuinfo@nrnt.co.uk

