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## Neem: India's tree of life

By Anna Horsbrugh Porter

Producer, The Wonderful World of Neem

### The Neem tree grows prolifically throughout South Asia, especially in India, Sri Lanka and Burma.

Its medicinal properties have been known about for thousands of years - Neem features in ancient Sanskrit texts - and its uses are so varied that this tree is called the "Village Pharmacy" of South Asia.



A large Neem tree usually stands at the centre of each village

Recently, there has been a growing interest from the international agro-chemical business over the potential of Neem as an organic alternative to industrial pesticides.

Patents on the use of Neem have been taken out by international companies, one of which was at the centre of a 10-year court battle.

An international group led by the Indian environmentalist Dr Vandana Shiva took the case to the European Patent Office, claiming you can't patent ancient knowledge, and calling it bio-piracy.

**“ We wanted to reveal what bio-piracy is, this patenting of indigenous knowledge and bio-diversity ”**

Vandana Shiva  
Indian environmentalist

"We wanted to reveal what bio-piracy is, this patenting of indigenous knowledge and bio-diversity," she says.

"We thought a patent that's held by the biggest superpower of the world and one of the biggest chemical giants would be an effective patent to take on."

The patent was revoked.

### Daily life

In the villages of Rajasthan near Jodhpur, the Neem tree is still essential to daily life.

A large Neem tree usually stands in the centre of each village, providing shade and cool underneath its branches - it is said that the temperature under a Neem tree is always two or three degrees cooler than in any other shade.

When the British laid out the Indian capital, New Delhi, at

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the beginning of the last century, they planted avenues of Neem as a natural air conditioner for the new city.

The traditional uses of Neem are many and varied; when a child has a fever or chickenpox, Neem leaves are put on the bed.

For eczema, psoriasis, ulcers or any other skin problems, a paste of Neem bark or leaves is made up and applied directly to the skin.



The Neem provides a popular traditional tooth cleaner

When winter clothes are put away for the summer, Neem leaves are put between them to keep away moths, and its leaves are boiled to make a bitter drink to cure worms and diarrhoea.

Animals eat Neem leaves as fodder in this desert climate where little else grows, and the seeds of the fruit are ground to make a natural pesticide.

### 'Antiseptic'

The tree is so crucial to life in this part of India that the Hindu villagers described how they worship it as a God, and told the story of Lord Krishna comparing himself as a God amongst men as the Neem tree is a God amongst trees.

Perhaps the most prolific use of the Neem tree throughout India is as a natural antiseptic toothbrush.

People break off a small twig, peel off the bark and then chew it into a soft brush at one end, which they then rub around the gums and teeth.



Dr Saxena has pioneered the use of Neem as a pesticide

Finally, they split the twig in two and use the flat hard surface to scrape their tongues.

### Global impact

The most valuable part of Neem for modern scientific research is the oil produced from pressing the Neem kernel.

Scientists call the active ingredient in this oil Azadirachtin - and the strength and quality of this is central to using Neem as a pesticide or fungicide.

Dr Ramesh Saxena, head of the Neem Foundation in India, has pioneered the use of Neem as a natural pesticide in South Asia, the Philippines, East Africa and Australia.

He says Neem has been in his blood for the past 40 years, and believes it can have a global impact on some of world's greatest problems including malaria, dengue fever, Aids and human population growth.

However, he warns that India has to act fast to realise Neem's potential and profit from it as China and Brazil are rapidly overtaking India, each cultivating millions of Neem trees each year.



The digital knowledge library is India's answer to bio-piracy

### Digital library

Crucial to unlocking the potential of Neem is finding a way for multi-national companies to work in cooperation with South Asian governments' Neem research.

For the past 10 years, the right to patent a fungicidal use of Neem has been fought over and lost in a bitter bio-piracy case.

Part of the Indian government's answer to the threat of bio-piracy was to set up the Traditional Knowledge Digital Library in Delhi.

Here the director, Vinod Gupta, explained how his team has translated millions of recipes of traditional ayurvedic medicines from ancient texts into modern medical terms and collated them into an online library.

This will be made selectively available in different languages to patent offices around the world to enable them to check whether a request for a patent is for a genuinely new use of an ancient medicine like Neem, or one that has been known about and used for thousands of years.

*The Wonderful World of Neem will be broadcast on Radio 4 at 2100BST on Monday 17 April or listen online for 7 days after that at Radio 4's [Listen again](#) page.*

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