Neem is unlike neem

The tropical Neem tree Antalea azadirachta,former Azadirachta indica (A.Juss), belongs to the family of Meliaceae and has been revered by Indians for centuries.
Millions have cleaned their teeth with neem twigs, smeared skin disorders with neem leaf juice, taken neem as a tonic, placed neem leaves in books, closets and grain bins to keep troublesome insects away,and used it for the protection of people and animals against insect pests .
The utilisation of neem kernel extract in the form of neem oil was discovered for the western world as a plant protection product and natural insecticide in 1959 . The neem kernel contains various secondary metabolites including the Azadiractin A-L group, the limonoids Salannin, Nimbin and others, which have since been in use in the form of neem oil as a 'soft' pesticide. Yet neem oil bears the risk of harbouring and accumulating so called Aflatoxin which is toxic for mammals and can lead to liver cancer.
Neem oil can be extracted by pressing the fruit and kernel (similar in looks to olive) or by adding chemical solvents to the pulp which results in a higher extraction rate. The pressing method is mainly used in India and some African countries where neem trees grow wild in abundance and solvents are expensive and not readily available. Where neem trees are grown commercially (Central America, Australia) solvent extraction is the norm. Residues of toxic solvents which occur after chemical extraction may help to increase the efficacy of various neem oil products but they also counteract the advantageous quality of not harming beneficial insects like bees, lacewings, encarsia wasp, thrichogramma wasp and predatory mites which play an effective role in the natural regulation of pest populations, and support the organic grower who seeks to manage crops by balancing the insect world, and the grower who applies methods of integrated pest management where the economical threshold is paramount for the use of harsh pesticides.
In the late 1980's Trifolio-M Co, a biochemical company from Germany cooperated with Parrys, an Indian company with vast holdings in neem plantations,to develop a second generation and superior neem product called NeemAzal-T/S which is based on a watery extraction process where only the active compounds are extracted from the kernels and the oil free extract is formulated with a neutral organic vegetable oil which is free of Aflatoxin and solvent residues.
Not only does this patented extraction method guarantee a broad-spectrum botanical insecticide which does not harm the user and beneficial insects but allows a high standardised rate of concentrated, purified and biologically active ingredients (10,000 ppm Azadirachtin=10g/l) and good efficacy in the control of target insects including Aphids, Thrips, Caterpillars, Whitefly, Mealy-bug, Mites and Scale.
Tests conducted by Polytech Christchurch have shown promising results controlling the Nasanovia ribis-nigri lettuce aphid where best results are achieved in the aphids early nymph stage and before they enter the heart of the lettuce.
NeemAzal-T/S controls target pests on contact or by ingestion. The product acts by way of antifeed and interference with the moulting process,also by reducing fecundity, oviposition and breeding ability.
The efficacy is largely dependent on weather conditions (rainfast after 4 hours), intensity of pest population, type of pest and physical stage of pest. Direct sunlight and high UV-radiation lead to rapid degradation of the active ingredients.
The mortality of targeted insects is not immediate but they stop feeding shortly after eating or sucking treated surface, stop causing damage, and starve at a later stage. NeemAzal is particularly beneficial to the efficacy of Bacillus thuringiensis and controls two populations of leaf roller larvae in mixed form.
Residue trials in New Zealand on apple, grape and avocado show that the product, once applied, is rapidly taken up by the foliage and does not leave residues or taint the crop. As a precautionary approach users are advised that a period of three days should elapse between the last application and harvesting of crops.
The complex neem limonoid spectrum of more than 60 active ingredients and the multiple mode of action of NeemAzal prevent pests from developing resistance. Unlike synthetic insecticides with only one biologically active compound where their repeated use invariably results in build-up of resistance among the target insects. A number of these active ingredients found in the neem kernel act synergistically to enhance the mutual biological activity. These multiple modes of action on insects comprise many more than only the mortality of fully grown insects or their larvae. The biological effects which are well known and documented against a large variety of insects are: feeding deterrence, oviposition deterrence (1), mating disruption (2), insect growth regulating effect on metamorphosis (3), reduced fecundity and viability of eggs (4) and egg sterility (5).

The high quality of the resulting product NeemAzal-T/S allow for its use under BIO-GRO and Demeter

standards and the acceptance in the IFOAM scheme. In the USA the product is listed by OMRI(Organic Materials Review Institute)and in Europe by IMO(Institute for Market Oecology) which are both organisations who benchmark certified organic markets in their respective countries/continents.
In New Zealand NeemAzal-T/S is the only neem product registered by the Pesticides Board, and is acknowledged by entomologist Ruud Kleinpaste who, after running some efficacy trials, says:
"I am impressed with the efficacy trials outcome, and would certainly like to see NeemAzal-T/S products entering the New Zealand market for the organic control of a wide range of plant pests."

(1) –Saxena,R.C. et al, 1st International Neem Conference (Germany) 1981, pp 171-180
(2) –Saxena,R.C. et al, Applied Entomology 1993,p 6
(3) – Jagannadh,V., Physiological Entomology 1992, p 17
(4) – Vollinger, M., Proceedings 3rd International Neem Conference (Nairobi) 1987, pp 543-554
(5) – Sannaveerappanavar, V.T., PhD thesis, Uni of AgSciences (Banagalore), 1995