

## Patented Papaya

### Extending Corporate Control Over Food & Fields

In April 1998, the Papaya Administration Committee in Hawaii negotiated commercial licensing agreements with the patent owners, including Monsanto and Asgrow Seed Company. The license agreements included several limitations-of-use and compliance provisions, including a 'Material Transfer and Proprietary Rights Agreement' that must be signed by farmers who receive GE papaya seed from PAC.

In September last year, it was reported that the Hawaii Papaya Industry Association was preparing "to secure licenses on the transgenic papaya varieties and is working with the Papaya Administrative Committee to take over its existing contracts" and that "the transgenic papaya seeds previously distributed free to all growers will have to be bought from the association for a price yet to be determined" (Pacific Business News (Honolulu) September 30, 2002).

In Thailand, the extension of corporate control via patents is part of a broader project to force GMOs onto farmers in the region. Together with Syngenta, Monsanto is involved in financing GE papaya research and field trials in Thailand, as well as arranging for the use of patented genetic markers, etc. This has been done through the **Papaya Biotechnology Regional Network for Southeast Asia** established by International Service for the Acquisition of Agri-biotech Applications (ISAAA).

In March 1998 the ISAAA, based at Cornell University, established the Papaya Biotechnology Regional Network for Southeast Asia for the purpose of developing GE papaya in Thailand, Malaysia, the Philippines, Vietnam and Indonesia. Monsanto and Syngenta directly financed the creation of the Papaya Biotechnology Regional Network for Southeast Asia and sponsored the field trials that were later conducted in Thailand.

According to the ISAAA:

*"...the Papaya Biotechnology Network was formed and is sponsored by five Southeast*

*Asian (SE Asian) countries (Malaysia, Thailand, Philippines, Vietnam and Indonesia) and by the International Service for the Acquisition of Agri-biotech Application, **with technical and financial support from Monsanto.** A comprehensive plan was developed for genetic enhancement of papaya and subsequent technology transfer to SE Asia."*<sup>1</sup>

One of the primary functions of ISAAA is to promote GMOs in Asia. This is done by providing free biotech assistance for an "orphan" crop like papaya as a means of overcoming opposition to GMOs:

*"The Network makes it possible for scientists, regulators, and the public to focus regulatory activities around a **specific case—transgenic papayas.** This provides them with the opportunity to concretely address safety issues in relation to a biotech project that has already been subjected to rigorous regulatory review in developed countries."*<sup>2</sup>

The University of Hawaii and Monsanto financed and conducted study tours by Southeast Asian scientists to Hawaii. Included among the members of the Papaya Biotechnology Network of Southeast Asia are: the National Center of Genetic Engineering and Biotechnology (BIOTEC), PGEU and Kasetsart University in Thailand and MARD in Malaysia.

Scientists at BIOTEC and MARD cloned the coat protein of their own unique PRSV strains (in Thailand and Malaysia) under the ISAAA Biotechnology Fellowship Program funded by Monsanto and Syngenta.

When GE papaya is ready for commercial release ISAAA will "broker" commercial licensing arrangements for the patented genetic materials used.

**Examples of Patents that may be applied to GE papaya:**

US Patent No. 6,046,384 Papaya ringspot virus NIa protease gene

**Seminis Vegetable Seeds Inc & Cornell Research Foundation, Inc.**

US Patent No. 6,005,166 Papaya ringspot virus replicase gene

**Seminis Vegetable Seeds, Inc**

US Patent No. 6,002,072 Coat protein gene for the FLA83 W strain of papaya ringspot virus

**Seminis Vegetable Seeds Inc & Cornell Research Foundation, Inc.**

US Patent No. 5,998,699 Potyvirus coat protein genes and plants transformed therewith

**Seminis Vegetable Seeds Inc & Cornell Research Foundation, Inc.**

US Patent No. 5,877,403 Papaya ringspot virus protease gene

**Seminis Vegetable Seeds Inc & Cornell Research Foundation, Inc.**

US Patent No. 6,174,724 Chimeric genes suitable for expression in plant cells (any promoter naturally expressed in plants)

**Monsanto Company**

US Patent No. 6,255,560 Chimeric genes for transforming plant cells using viral promoters (CaMV 35S and 19S)

**Monsanto Company**

US Patent No. 5,034,322 Chimeric genes suitable for expression in plant cells

**Monsanto Company**

US Patent No. 5,352,605 Chimeric genes for transforming plant cells using viral promoters

**Monsanto Company**

US Patent No. 5,530,196 Chimeric genes for transforming plant cells using viral promoters

**Monsanto Company**

US Patent No. 4,820,639 Process for enhancing translational efficiency of eukaryotic mRNA

**Massachusetts Institute of Technology**

**Notes:**

<sup>1</sup> [http://bsf.icgeb.trieste.it/query\\_biosafety.php?biosafety\\_id=3264](http://bsf.icgeb.trieste.it/query_biosafety.php?biosafety_id=3264)

<sup>2</sup> <http://www.isaaa.org/projects/SEAsia/SEAsiaold/Transferx.htm>