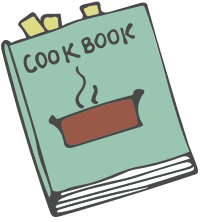


The Role of RNAi

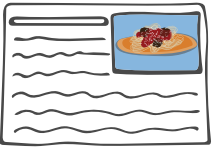
The RNAi process is much like a chef adjusting a recipe from their cookbook to accommodate the number of guests or an individual's preference.

In agriculture, modifying a specific "recipe" in a cell through RNAi can enable crops to protect themselves from pests and diseases, enhance their nutritional quality, or keep them fresher longer after harvest.



*Lots
of Information*

DNA contains all the information that enables cells to build and maintain themselves as well as perform specialized roles to create a complete living organism.



Specific Recipe

RNA is a set of instructions that help a cell perform tasks, such as determine what specific protein to make among many possibilities such as enzymes, collagen, etc.



*Special
Request*



Finished Dish

RNA interference (or RNAi)

is a cell's natural ability to examine RNA's "recipe" and adjust the instructions so that each cell achieves its intended purpose.



Served Meal

Many proteins are needed to make a living cell. By providing instructions for this process, we can adjust the production of a particular protein to impact how cells function and benefit the plant and/or consumer.



Or









RNAi in Agriculture

Since 1994, numerous RNAi-based products have been approved and commercialized or are coming to the market soon.

The Hawaiian Rainbow Papaya and RNAi – a Success Story

Papaya is a flagship crop in Hawaii, nutritionally important to both local and export consumers as a rich source of antioxidants such as Vitamins A, C, E & beta-carotene. Unfortunately, the plant disease, Ringspot virus, had been an escalating problem since the 1940's that was slowly decimating production. Despite numerous strategies to remedy this disease, and with no known natural resistance to the virus, production of papaya fruit, juices and other products was less than half its peak by 1998.

The University of Hawaii applied modern biotechnology and introduced a virus-resistant variety in 1998 using a mechanism now understood to involve RNAi. It is truly a success story. By 2001, with enthusiastic farmer acceptance, more than 77% of Hawaiian papaya acreage had this trait. Papaya production has now fully rebounded, ensuring a vibrant future for the Hawaiian economy and consumers.

Crop	Benefit
 Papaya	• Plant Disease Prevention
 Soybean	• Enhanced Nutrient Content
 Squash	• Plant Disease Prevention
 Potato	• Low Bruising
 Apple	• Non-Browning
 Alfalfa	• Easier Livestock Digestibility

For a closer look into how RNAi works...



Find the answer here:

<http://bit.ly/29ChJ9K>

