***GENETICALLY ENGINEERED FOOD***

***CHANGING THE NATURE OF NATURE****What You Need to Know to Protect Yourself, Your Family, and Our Planet  
Outline based on this book written, by Martin Teitel, Ph.D., and  
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I. The Agriculture that produces our food is vital for all human life  
A. the nutritional value and safety of our agriculture is the  
basis for our health.  
B. Food is very important to God.  
1. Many of the Feasts of the Lord are associated with food and with  
the harvesting of food  
2. In Acts Chapter 15:19-20 Apostles had a Council in Jerusalem to  
determine what Hebrew Laws (called the Laws of Moses) the Gentiles had  
to keep upon their conversion to Yeshua.  
a. 3 of the 4 DETERMINED AS NECESSARY, HAD TO DO WITH FOOD!!  
b. ACTS 15:19-20 19 Wherefore my sentence is, that we trouble  
not them, which from among the Gentiles are turned to God:  
20 But that we write unto them, that they abstain from pollutions of  
idols, and from fornication, and from things strangled, and from  
blood.  
C. I Corinthians 6:19-20 19 What? know ye not that your body  
is the temple of the Holy Ghost which is in you, which ye have of God,  
and ye are not your own?  
20 For ye are bought with a price: therefore glorify God in your  
body, and in your spirit, which are God's.  
D. Food is the basis of spiritual rituals to most religions of the world  
1. Food has communal, social, personal and spiritual importance to  
human life in all cultures  
2. (I believe) that’s why the enemy of the soul of man works so hard  
to defile it  
3.Many religions incorporate food into their worship  
4. Our deepest and even most essential connection to the food that  
sustains all of humanity is threatened by the conversion of food- from  
an intricate plant/culture system to a cold-blooded profit center-  
a. the transformation of what we love and are nourished by –  
into a product line engineered to maximize revenue -at all costs  
1.a. It may cost us our health and our blessings from God  
b. Besides the obvious health issues- bio-engineered food is a  
challenge to our spiritual, moral and religious lives. (SEE SHEET ON  
GENESIS ORIGEN STORY)  
II. How does Bio-genetic Engineering Work?  
A. A gene, (piece of DNA) from one source is isolated, removed  
and then “pasted” into the DNA of another target. Example scientists  
are taking the DNA of a fish and inserting it into a tomato’s DNA  
B. The process involves the insertion of a package of material:  
the foreign genes themselves, and a vector to carry them.  
1. This is due to the protective barrier of the target organism. (God  
designed)  
2. Scientists use viruses to invade the target  
a. Bio-techs attach a piece of DNA to a viral vector and then  
insert the virus (vector) into the recipient organism, so it can  
infect that organism, thus delivering the new DNA fragment into the  
DNA of the target organism.  
b. Because this process of “cutting and pasting” at a  
submicroscopic level can be difficult to keep track of, scientists  
often “mark the vectors” with anti-biotic-resistant genes so that  
normal cells can be distinguished from genetically engineered cells.  
c. The cells are covered with antibiotics and those cells that  
have successfully incorporated the foreign DNA and the resistance  
genes from the vector grow, while those that haven’t been modified  
die.  
d. There is increasing controversy- the use of viral vectors  
sometimes called promoters are lengths of genetic material found in  
all genes: it is the promoter that enables a gene to “express itself”,  
or to actually make the protein that it is capable of making.  
e. Most often used is the cauliflower mosaic virus CaMV  
III. Potential hazards of the Cauliflower mosaic virus CaMV  
1. Could activate dormant viruses in the target host  
2. Could combine with viruses already present in the target host  
3. Since they are now anti-biotic resistant, abnormal results may  
not be able to be determined or controlled  
4. Very little research by independent scientists is being done  
a. What research has occurred has scientists citing a physical  
similarity between CaMV and the HIV virus.  
b. An example of an especially disastrous viral combination and  
appears to be theoretically possible  
IV. Labels  
A. NO REQUIREMENT IN THE UNITED STATES TO LABEL GMO FOODS  
1. Can not tell just by looking at the food  
2. worse news- many of the growers and brand names we have come to  
trust for providing us with fresh quality produce are now co-owned by  
Monsanto, DuPont, & Dow  
a. These mega companies have spent billions of dollars buying up  
as many seed companies as possible to sell their genetically  
engineered seeds  
b. Seed companies continue business as usual- only NOW they are  
selling Gen-Seeds.  
3. In the U.S. genetically engineered crops have not been segregated  
from the normal ones so food producers are not positive one way or the  
other  
C. Because of the financially disastrous failure of the Flavr  
Savr Tomato in 1994, manufacturers aren’t risking their market by  
informing the public about their GMO foods  
1. labeling is totally voluntary in the U.S.  
2. Monsanto is playing both sides of the street, producing chemicals  
that kill plants and plants that resist being killed by chemicals.  
a. by creating food crops that are resistant to herbicides, you  
create a niche market for yourself and increase profits for the  
herbicide manufacturer. (of course if you own the herbicide as well,  
then you create a closed-loop market for yourself)  
1a. these crops are called Roundup Ready (Roundup is quite toxic  
affecting the soil and water, and also the habitat for wildlife as it  
kills everything except genetically engineered foods.)  
2b. Although Environmental Defense and Al Gore have portrayed  
glyphosate- the active ingredient in Roundup as safer than other  
herbicides it is the 3rd most common cause of illness among  
agriculture workers in California.  
I. What are they trying to produce?  
A. Herbicide tolerant plants- designed to survive sprayings of  
weed killers. Just like every other industry in the world,  
agriculture is attempting to eliminate the need for workers. Using  
chemicals is their answer.  
1. Monsanto came up with “The Innovator Canola” however, the seeds  
did not produce consistently and an unexpected gene showed up.  
2. Monsanto sold 60,000 seed bags across Canada before pulling off the market  
a. proves that scientists can’t predict the outcome of gen seeds  
b. Ecologist magazine reported, “A number of different viral-resistant  
transgenic plants engineered with a viral gene actually showed  
increased propensity to generate new, often super infectious viruses  
by recombination..”  
B. Frost resistant plants  
1. Genes from an arctic fish that code for an antifreeze  
protein have been integrated into tomatoes in an attempt to confer  
resistance to frost. Believe that frost-resistant tomatoes could  
retain their texture after being frozen.  
2. Another attempt was the ice-minus bacterium. First genetically  
modified organisms to be released into the agricultural ecosystem.  
a. Ice requires a regularly shaped surface on which to crystallize  
b. Lindow (@ Berkeley Univ. spliced out the gene responsible for  
giving the bacterium Pseudomonas syringae a regular surface. This  
“ice-minus” bacterium was sprayed on strawberries. It worked  
preventing ice from forming on the plants and avoiding frost damage.  
1a. While these transgenic frost-resistant organisms continue to be  
produced and used, serious concerns remain regarding the ecological  
consequences of dispersing transgenes into the environment.. If they  
grow rampantly, they could disrupt ice formation where not sprayed…A  
lab created bacterium which prevents ice formation from occurring…  
C. Pesticide resistant plants. Bt or Bacillus thuringiensis is a  
bacterium whose proteins are an insecticide. (Caterpillars, beetles  
and fly larvae are targeted.) Non-targeted insects could be affected  
by natural ways and means of nature’s processes.  
1. Initially only sprayed on the plants, now scientists are  
engineering plants to grow with the gene in them.  
2. Approved by the EPA in 1995, Monsanto’s New leaf potato was  
released to market. (EPA does not regulate food products, however  
since this food product contains a genetically engineered pesticide  
within it, it is regulated.) A $250 million dollar market  
called the biopesticide market.  
3. New generations of Bt crops and sprays are being developed in  
anticipation of the decreasing efficiency of Bt due to insect  
development of resistance.  
a. Aventis’s brand of Bt corn, called StarLink uses a different  
Bt protein that will retain its efficacy in a transgenic crop system  
that is inundated solely with Cry1A toxins, (the usual Bt toxin) where  
resistance might develop.  
4. Val Giddings, vice president of the Food and Agricultural Division  
of the Biotechnology Industry Organization, calls concerns about pest  
resistance “bogus,” claiming that technology will keep “well ahead of  
evolution of insect resistance for 100 years or more.  
a. Given the fact that the entire international medical  
community has been unable to stay ahead of anti-biotic resistant  
organisms, that seems unlikely  
(In Sept. of 2000, it was discovered that StarLink corn had been  
intermixed with the human food supply, even though this was only  
approved for animal feed because of its potential for causing allergic  
reactions in people. While initially thought to be confined to one  
company’s taco shells, StarLink corn soon turned up in hundreds of  
food products on U.S. grocery shelves. Our food-distribution system  
simply doesn’t have the safeguards in place to protect us.  
D. THE TERMINATOR is a technique in which genetically altered  
plants are programmed to kill their own seeds. (More than 1.4 billion  
farmers around the globe rely on saved seed. The terminator seeds  
forces them to have to buy more seeds each crop season. This creates  
the dependence on big seed companies they want.  
1. Developed by The USDA and Delta& Pine Land Patent #5,723,765.  
There are now more than 30 terminator patents held by every major  
player in the agriculture field.  
2. Outraged that public resources and money were used to develop this  
technology which so blatantly serves private interests, more than  
7,000 people have written to the USDA in opposition.  
a. sterile seed pollen can drift from field to field, carried by  
the wind or insects, rendering nearby crops sterile.  
In may of 1999, New Hampshire became 1st state to ban the use of  
terminator technology  
E. rBGH or recombinant Bovine Growth Hormone or rBST- recombinant  
Bovine Somatotropin is a gen. eng. Hormone that tricks a cow’s body  
into producing more milk than it otherwise would. (Developed by  
Monsanto)  
1. Milk from cows treated with rBGH has been know to be contaminated  
with pus from udder infections, with antibiotics administered to stem  
those infections and with high levels of insulin-like growth factor  
(IGF-1), which has been liked to human breast and gastrointestinal  
cancers. (IGF-1 is a hormone protein that is present in humans and  
helps cells divide. Of course, high levels of cell division and  
growth are undesirable.)  
a. the high levels of IGF-1 found in milk from rBGH cows shows  
that more precautions should have been taken before permitting the  
release of this substance into the food supply.  
b. Former FDA employee Dr. Richard Burroughs was fired after  
ordering toxicology and immunology tests on rBGH.. He had this to  
say, “I was told that I was slowing down the approval process. It used  
to be that we had a review process at the FDA. Now we have an  
approval process. I don’t think the FDA is doing good honest reviews  
anymore. They’ve become an extension of the drug industry.”  
II. Dangers of the technology  
A. Gene Jumping =Genes do not necessarily remain in organisms,  
they can flow through natural cross-pollenization to related  
organisms, or move between unrelated organisms using viruses and some  
bacteria as vectors. This process is known as horizontal gene  
transfer. (Super weeds can result with herbicide resistance,  
pesticide resistance or viruses in them)  
-Scientists that are creating new species of plants are endangering  
the planet PERIOD.  
B. Antibiotic resistance.  
1. The use of antibiotics in bio tech plants can create resistance to  
these antibiotics in animals and humans.(also to bacteria they  
encounter in the human digestive system)*