ACF GENETHICS NETWORK CONFERENCE

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Ten minutes is a very short time in which to address the topic of what are the community's concerns about genetic engineering and I can't hope to cover the topic in detail. I'm not entirely sure that I can claim to represent the concerns about genetic engineering of the community at large. As a scientist, I certainly do have my own concerns about it, and through the international conferences of FINRRAGE, I have had first hand knowledge of what women's concerns about GE are & how _ in so called developing countries will be affected

1. Rationale of GE

- study of gene expression & future
- produce animals & plants better breeding qualities.
- improving on nature
- merely hastening the process of natural evolution
- in the human sphere to reduce or eliminate the incidence of genetic disorders
- 2. The concerns about GE

Concerns about genetic engineering often elicit a response from scientists & the biotechnology industry that the fears of the community would be allayed if only the community had more info about the promises of GE to improving our lifestyle, our health, and even alleviate the problems of hunger in developing countries. The line is that if the community only understood the benefits of GE then there would be no concerns.

But quite clearly there are real concerns, based on sound knowledge and recent history.

(i) human genome project and human gene therapy

- worldwide project to create a genetic map and sequence the entire content of human DNA, consisting of 3 billion base pairs The project is roughly estimated to cost \$3 billion

- whose genome are they sequencing anyway? The idea is to come up with an average genome or something that is considered to be the "norm", and presumably the rest

- scientists will be tarrying or concentrating on the genes that are linked to human genetic disorders. How will this info be used

- Concern that there will be discriminated against on the basis of your genes

- one thing I think we really do have to fear about the human genome project is its tenacious competitiveness and its potential commercial value. A quote from New Scientist in 1990:

"Whoever gets the genome data first will decide what happens to them and will be in an unassailable position to dictate terms over its commercial exploitation."

The questions are who will own this information - biotechnology companies, individuals or doctors, genetic counsellors. With the rush on patenting gene sequences, the biotechnology companies seem to be winning the race on owning this information.

In the area of human gene therapy there is a distinction between what is called somatic cell gene therapy and germ line gene therapy. Somatic cell gene therapy involves introducing new genes into the cells of a particular tissue or organ, such as bone marrow cells and limited trials have been conducted so far. There is a concern that introduction of genes into somatic cells may disrupt what are called tumour suppressor genes so that this type of gene therapy could carry a risk of inducing cancer. Human germ line therapy as far as we know has not been attempted but the development of IVF technology which brings human embryos into a laboratory environment certainly makes human embryos accessible for manipulation. What is being done at present is the genetic screening of embryos before they are implanted back into women. This procedure has a eugenic philosophy in that out of the multiple embryos that are

created in vitro because women are superovulated, only genetically perfect embryos will be reimplanted.

(ii) release of GEO's into the environment

- esp. with members, can't retrieve

- what happens if the released organism x 3 with others natural spp
- (iii) whole application of GE to food production and agriculture

- one of the most active areas of genetic engineering and its commercial application is to agriculture and food production. This is supposed to introduce better breeding qualities into plants and animals that are somehow superior to varieties that already exist. One example on or localshores was the production of transgenic plugs which have extra genes for growth hormone. And these little piggies, or rather bigger piggies, went to market without consumer knowledge. I believe consumers should have the right to know that they are eating meat from a genetically altered animal. But more fundamentally where is the need for transgenic pigs? Why do we need transgenic pigs in Australia? Is there an under supply of meat? Aren't enough animals already killed for human consumption?

-recently we've heard that monash reduction in biochemisty. This brings me to the international perspective on GE. One of the commonly stated reasons for developing so-called superior breeds of animals and plants is that these will somehow alleviate world hunger. The promise is that GE will increase the production of food. To me this is the biggest myth of all. The tragic consequences of the Green Revolution in countries such as India have been very apparent. The Green Revolution involved the introduction of "miracle seeds" or high yielding varieties of grains such as rice. These crops were responsive to very high quantities of fertilizers and depended on heavy irrigation.....

continue with RAGE article and then conf proposal

- GE will not solve social and economic inequalities in the current distribution of the world's resources.