1 Introduction:

The cultivation area of GM crops has been increasing dramatically since the first approval of commercialization of genetically modified crops in 1996. Genetically modified technology are generally considered not only as a means of improving the supply of food, cotton, and forage but a way to fortune. Table 1 exhibits the hectares of global planted area of GM crops from 1996 to 2005. As table 1 shows, 1665 thousands hectares were planted with GM crops in 1996. By 2005, the number had grown up to 87163 thousands hectares- a 52-fold increase in 9 years.

Table 1: Global GM Plantings by Country

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
U.S.	1449	7460	19259	26252	28245	33024	37528	40723	44788	47395
Canada	139	648	2161	3529	3331	3212	3254	4427	5074	5858
Argentina	37	1756	4818	6844	9605	11775	13587	14895	15883	16930
Brazil	0	100	500	1180	1300	1311	1742	3000	5000	9000
China	0	34	261	654	1216	2174	2100	2800	3700	3300
Paraguay	0	0	0	58	94	338	477	737	1200	1800
Australia	40	58	100	133	185	204	162	165	248	275
South Africa	0	0	0.08	0.75	93	150	214	301	528	595
India	0	0	0	0	0	0	44	100	500	1300
Others	0.9	15	62	71	94	112	136	209	527	710
TOTAL	1665	10072	27161	38730	44163	52300	59245	67357	77448	87163

[a] Unit: Thousand

[b] Source: International Service for the Acquisition of Agri-Biotech Applications(ISAAA). Available on the website: http://www.isaaa.org

It seems like more and more farmers have embraced genetically modified organisms, especially in the US, but they are frustrated with the uncertainty of marketing GM crops. The European Union, for instance, justified its policy on the basis of precautionary principal, which has been endorsed by the strong opposition toward GMOs among European consumers. Besides, some agricultural importing countries, such as European Union and Japan, legislated the imposition of mandatory labeling of GM foods. Consumer organizations and other nongovernmental organization have also urged that government agency should strictly enforce GMO regulation in many parts of the world. As debates on the future biotechnology application in agricultural production had been intensified, it is crucial to investigate how consumers are willing to accept such GM productions.

The regulation of GMO produces in Taiwan are governed by Department of Health (DOH), Executive Yuan. In the beginning, the labeling system is voluntary. In 2003, A new regulation stipulates that foods containing more than 5% of GM ingredient, such as soybean or corn, must be labeled as "GMO-contained". In 2002, DOH inspected all commercialized GM products and found that only 38% of these samples passed the inspection. In the same year, Gallup Market Research Corp. suggested that about 56% of the Taiwan consumers knew about GMO, 58% of them were concerned with the safety issues, and 88% of them agree to impose mandatory

labeling system.

Gallup's survey suggested Taiwan consumers' aversion to GM products but we are not sure if this phenomenon remains unchanged if the GMO becomes more common. Another noteworthy point is that 37% of the consumers believed that GM products should be cheaper than its non-GM counter part. To what amount, however, is not mentioned.

This research are mostly motivated by the above mentioned points and there are two questions we would like to address. The first one is that how consumers' preference are formed. Is there a universal factor that influences a consumer's attitude toward GMO. We attempt to differentiate those significant factors causing consumer concerns and compare our results with these found in previous studies. Understanding the extent of consumers' acceptance and the factor affecting consumers' attitude and perception would be an essential key to the success in marketing GM foods in Taiwan.

The second one is how cheap should a GM product be. We would like to quantitate such amount by what is called "willingness to pay for premium". Willingness to pay analysis had been widely utilized in various disciplines, such as the cost for environmental protection and evaluation of non-market goods. What we are trying to do is provide a new mechanism for further researchers to estimate consumers' willingness to pay for premium.

In the next section, we briefly review some related literatures. Section 3 describe how the survey is conducted. The data structure and model specifications are presented in Section 4. Section 5 applies our proposed model to analyze the willingness to pay a premium for genetically modified salmon. Also the estimation based on our model will be compared with Turnbull (1976) estimates. Section 6 concludes the study.