

**Efficacy and Development of premix as a Nutrigenomic Super food  
Lifestyle Related Diseases**

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## **Summary**

The concept that diet impacts wellbeing is an ancient one. Nutrigenomics incorporates known connections among sustenance and acquired qualities, called 'inborn errors of metabolism', that have for some time been treated by controlling the eating regimen. For instance is Phenylketonuria (PKU), it is brought about by a change (transformation) in a solitary gene. Influenced people must stay away from nourishment containing the amino acid phenylalanine. The Human Genome Project of the 1990s, which sequenced the whole DNA in the human genome, kicked off the art of nutrigenomics. By 2007 (Castle & David) researchers were finding various interrelationships between genes, sustenance, and ailment. Nutrigenomics brings along new phrasing, novel exploratory systems and an in a general sense new way to deal with nourishment inquire about, for example, high throughput advancements that empowers the worldwide investigation of quality articulation in a phone or living being. Nutrigenomics would require a community exertion from individuals in hereditary qualities and the businesses of general wellbeing, sustenance science and culinary. It's anything but difficult to make great tasting food with certain fixings. Put some oil or margarine in it and it will taste great. The test is the manner by which to take the fat out and make fortifying yet additionally great tasting nourishment." Therefore a move in general wellbeing is incredibly required, and with an expanding occurrence of weight and unending sicknesses, for example, type II diabetes, nutrigenomics may end up being the panacea later on.

Unhealthy living practices are the major factor associated with present life style. It is culminating into high mortality rate diseases, especially noncommunicable chronic diseases (NCDs) that are responsible for most of the deaths in past decade. Life style associated diseases are a group of diseases resulted from exposure of humankind over longer period to unhealthy diet, lifestyle and living environment. These diseases share almost similar risk factors, owing to, slow in progression, noninfectious and non transmissible e.g. cardiovascular, nutrition induced cancers, diabetes, renal failure, hypertension etc.

Primary motive in selection of life style associated diseases in present review is entirely based on their impact in human health. WHO report suggested a rapid change in

disease profile for past few decades from communicable diseases to noncommunicable diseases irrespective of region, ethnicity and economy. About 60 % deaths worldwide resulted from life style associated chronic diseases, double than infectious diseases. In India too, the non-communicable diseases were responsible for 53 % deaths, out of which 24 % casualties alone contributed by cardiovascular disease (CVDs). Generally, these diseases have specific metabolic risk factors associated cellular mechanism that results mainly in mitochondrial alterations, oxidative stress and inflammation etc. like epidemiological characteristics. These responses to changed environment contribute significantly in the inception and progression of lifestyle related diseases. Primarily, it is the unhealthy diet that led to increase in metabolic risk factors of bloods like pressure, glucose, lipids etc. Diseases associated with modern life style also alter human body inflammation process. It is a self limiting and controlled process executed by innate immune system (IIS), required restrict incursion of foreign material and limiting further damage to the human body.

### **Objective:-**

1. To check the awareness about life style diseases and the nutrigenomics super foods
2. To standardized and develop premix.
3. To develop products using standardized premix.
4. To calculate nutritive value of the products.
5. Organoleptic evaluation of development products.

**Chapter 1** dealt with the history of nutrigenomics and role of nutrigenomics how it works on human genome, preventive nature of health, application of nutrigenomics on anti ageing, obesity, cancer and medical claims, and also defined introductory part of life style related diseases like diabetes, cancer etc. and defined role of soyabean, carrot, ginger, cabbage, green pea and benefits of their nutrient content and health benefits in nutrigenomic according to the objective.

**Chapter 2** dealt with the review of literature genes affects metabolic signals of nutrients, expression of genetic information, essential nutrients, transcriptional factors, how food

affecting genetic information, discussed proteomics for protein expression. Carrots roots is important vegetables having carotenoids and dietary fibre, their nutrient sources, blanching, dehydration and drying methods in different temperature, work on determining physical and chemical parameters influencing their nutritive content. Ginger (*Zingiber officinalis*), it is widely distribution and their uses in food, beverages, antioxidant properties and medicinal uses, also described antioxidant activity in different methods. Soybean contained high protein which relief from PCM and its protein compare with animal protein, its cosmopolitan distribution and excellent source of micronutrients and phytochemicals most concentrated source of isoflavones. Cabbage botanical features and different types of cultivation, antioxidant, anti-inflammatory properties and clinical facilitating the reduction of serum LDL as proposed in objective.

**Chapter 3** dealt with material and method proposed in the synopsis a study on “to checking the awareness on nutrigenomic food and life style related diseases” was conducted for gaining the overall information about the study. The study was conducted on 122 respondents in which 79 male and 43 female were participated, questionnaire was asked on hypertension, CVD, diabetes, family history by their age and gender. Preparation of premixes of cabbage, carrot, ginger, pea and soybean for the development of product, product preparation was done by different ratio taken of the premixes, nutrient analysis of the product and checked acceptance of the product.

**Chapter 4** dealt with result and discussion of the study. Statistical analysis was done through frequency, percentage in different age group and gender and checking the awareness and acceptance of the product as proposed in synopsis.

**H01: There exists o association between age and life style diseases.**

It was observed that there was stastically significant association among age and life style diseases, hence null hypothesis was rejected and alterative hypothesis accepted.

**H02: There exists no association between gender and life style diseases.**

It was observed that there was stastically significant association among gender and life style diseases, hence null hypothesis was rejected and alterative hypothesis accepted.

**H03 There exists no effect of herbal product and health status.**

It was observed that there was statistically significant association among herbal product and health status, hence alternative hypothesis accepted and simultaneously proven.

**H04: There exists no association between education and knowledge about the nutraceutical and functional food.**

It was observed that there was statistically significant association among education and knowledge of the nutraceutical and functional food, hence alternative hypothesis accepted and simultaneously proven.

**H05: There exists no association between diet and health status of the respondent.**

It was observed that there was no statistically significant association among diet and health status, hence null hypothesis accepted and simultaneously proven.

**H06: There exists no association between developed product and acceptance of the product.**

It was observed that there was no statistically significant association among developed product and acceptance of the product, hence null hypothesis accepted and simultaneously proven.

## **Conclusion**

This part has given principal bits of knowledge into personalization; learning that is basic to comprehend the significance and results of genomics-based personalization in the sustenance area. The wholesome science is to tailor nourishing prerequisites to the individual and consequently enhance abstains from food for wellbeing. Nonetheless, customizing diets is a profoundly faulty research need. The emphasis on nutrigenomics is innovation and market driven - it has not been educated by an appraisal of the conceivable advantages to wellbeing. Fitting weight control plans to hereditary make-up raises significant concerns on the grounds that privatizing and individualizing dietary guidance could without much of a stretch befuddle and undermine adhering to a good diet messages. There is noteworthy potential for shoppers to be misdirected about their wellbeing as a result of the absence of control of hereditary tests and the befuddling and opposing data that individual will be sold.

Nutrigenomics is the investigation of impact of dietary bioactive segments on genome to modify quality articulation and at last phenotype. We eat a complex sustenance which contains various supplements. Insufficiency or over abundance of specific supplements prompts diseased or healthy body. Satisfactory dietary supplements anticipate or postpone endless scatters as well as decline the movement and seriousness of perpetual sicknesses. The test for nutrigenomics analyst is to find the qualities and their relationship to consume fewer calories that are associated with the advancement of endless maladies. In not so distant future nutrigenomics analyst will almost certainly give customized nourishment as per person's genotype.

It seems designing a comprehensive program regarding a healthy lifestyle in this population to be of prime necessity because this age of life need to be a special treatment for sustaining rest of life. So, our results suggest measuring the quality of life and general health status in elderly people.

Changes in eating habits, availability of fast food, better living environment and work standard, easier life style with limited walking, better economic status and urbanization are some examples of current life style. This shift has improved present human living standards but has taken a fall on health status as shown by marked increase in mortality rates in last decade by non- communicable diseases. Also luckily there has been a greater invention in past decade regarding knowledge of human genome, besides various transcriptomics, genomics, metabolomics and other omics which has added nutritional and medical science researchers to counter the posed challenges. Nutrigenomics has become important both for unhealthy as well as healthy people to improve health using modification of diet. Multiple in vitro, in vivo studies along with clinical studies have been carried over worldwide that have increased chances of healthy living using dietary intervention. However important is need of high integrity and use of regulatory mechanism with ethical means to further nutrigenomic research.

### **Recommendation for further studies**

- Study could be come out on target sample in order to achieve equal no. of person from each group described by population group.

- Advancement of developed product ingredients can be replaced by locally available food or by evergreen seasonally available vegetables.
- Molecular studies could also be carried out for developed nutrigenomic product and lifestyle diseases.
- Comparison between developed nutrigenomic product and commercially available nutrigenomic product could also be done.