CHEMICAL FUNCTIONAL ESSENCES OF FOREST WEST AFRICAN INDIGENOUS FOODS AND IMPLICATIONS OF CHANGE TO MODERNIZATION DIET FOR HEALTH

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Chemical functional essences of forest west African indigenous foods and implications of change to modernization diet for health by Osuagwu, G. C. is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.
A people, over very long time, genetically adapt to their environment. The most intimate part of the environment to any people is their food. Alienation from their environment; such as befell Diaspora Africans, or displacement of their indigenous food by some alien diet; such as is befalling contemporary Africans, is physiologically, stressful. Stresses cause diseases.
“Researchers have shown that race and possibly genetics play a role in children's sensitivity to developing allergies. Researchers found: African-American children were sensitized to at least one food allergen three times more often than Caucasian children”. American diet is indigenous to Caucasians and alien to Africans. The indigenous food of a people is, all factors considered, the best for their wellbeing. Bleaching red palm-oil, to buy vitamin A, is like selling shelled breadfruit to buy rice; disease of ignorance.
INDIGENOUS FOODS

• Foods that are indigenous to a people; consumed and passed on over innumerable generations by ancestors.
• Food to which a people are adapted to; at times, at the genetic level.
• The two main indigenous food crops of Forest West Africa are the Oil Palm (*elaeis guineensis*) and Yam (*Dioscorea spp*).
• These two crops define Forest West Africa, agriculturally, as *Palm Belt* and *Yam Belt*.
The term functional foods was first used in Japan in the 1980s, and refers to “Foods for Specified Health Use”. "Functional Food is a Natural or processed food that contains known biologically-active compounds which... provides a clinically proven and documented health benefit, and thus, an important source in the prevention, management and treatment of chronic diseases of the modern age". Foods consumed, specifically, because they are helpful in the management of known health challenges are ‘functional foods”. Foods, like yam, palm-kernel and pigeon-pea, which are eaten for their known healing ability in the Forest West African environment, in relation to SCD, for instance, are examples functional foods.
MODERNIZATION DIET AND DISEASES

• Diet that people adopt as part of adoption and adaptation to modern industrial and urban culture. Although mostly European, alien, diet some people associate modernization diet with modernity and ascribe prestige to it.

• To Forest West Africans; wheat bread and milk are key parts of modernization diet.

• Modernization diseases are those associated with the metabolic syndrome; obesity, diabetes, cardiovascular diseases, stroke, kidney failure, etc., that result from modern life-style assault on human physiology.
SOME YAM FOOD FUNCTIONS

BIOTIN

THIOCYANATE
LIPOIC ACID

DIOSCORIN
SOME PALM OILS’ FUNCTIONS

BETACAROTENE

α-TOCOTRIENOL
DODECANOIC (LAURIC) ACID  \( \text{C}_{12}\text{H}_{24}\text{O}_2 \)
VEGETABLE FUNCTION: FOLIC ACID
SEASONING FUNCTION: PEPPER; CAPSAICIN
SEASONING FUNCTION: SALT; POTASSIUM

$K^+$
ADAPTIVE FOOD FUNCTION ADOPTION BY AFRICAN ANCESTORS

• Thiocyanate in Cassava
• Lauric Acid in Coconut
• Phenylalanine in Pigeon Pea
PIGEON PEA; CAJANUS CAJAN FUNCTION: PHENYLALANININE
MALADAPTIVE MODERNIZATION FOOD FUNCTION ADOPTION

- Gluten opioids in Wheat
- Lactose in Milk
- Casomorphin Opioids in Milk
TOXIC MILK FUNCTION: LACTOSE
WHEAT AND MILK: SPECIAL PROBLEMS

- Table I: GLUTEN EXORPHINS; OPIOID PEPTIDES
  - * Gluten exorphin A5: H-Gly-Tyr-Tyr-Pro-Thr-OH
  - * Gluten exorphin B4: H-Tyr-Gly-Gly-Trp-OH
  - * Gluten exorphin B5: H-Tyr-Gly-Gly-Trp-Leu-OH
  - * Gluten exorphin C: H-Tyr-Pro-Ile-Ser-Leu-OH
  - * Gliadorphin: Tyr-Pro-Gln-Pro-Gln-Pro-Phe

- Table II: CASOMORPHIN PEPTIDES; OPIOID PEPTIDES IN MILK
  - * β-casomorphin 1-3: H-Tyr-Pro-Phe-OH
  - * Bovine β-casomorphin 1-4: H-Tyr-Pro-Phe-Pro-OH
  - * Bovine β-casomorphin 1-4, amide: H-Tyr-Pro-Phe-Pro-NH₂
  - * Bovine β-casomorphin 5: H-Tyr-Pro-Phe-Pro-Gly-OH
  - * Bovine β-casomorphin 7: H-Tyr-Pro-Phe-Pro-Gly-Pro-Ile-OH
  - * Bovine β-casomorphin 8: H-Tyr-Pro-Phe-Pro-Gly-Pro-Ile-Pro-OH
DIASPORA FOODS, HEALTH DATA AND US

• “Us do what you say the peoples do in Africa. Us feed her yams every single day. Just our luck she hates yams and she not too polite to let us know. Everybody for miles around try to come up with yam dishes that don’t taste like yams. Us get plates of yam eggs, yam chitlins, yam goat. And soup. My God, folks be making soup out of everything but shoe leather trying to kill off the yam taste.” -The Color Purple...Alice Walker

• A commentator simplifies the language:
• “Back home, Henrietta (Sofia’s youngest daughter) is fighting for her life. The family is treating her illness the same way people in Africa treat it: with lots of yams”.

• The Igbo have a saying that backs the above observation:
• “Ihe eji ama mgbe ogwu ghere wu ji abanyere ya!; The sure proof that the boiling medicine is done is that the co-boiled yam is done!”.

• West Indians healthier; more African food functions in diet.
ESSENTIAL PHYSIOLOGICAL FUNCTIONS OF FOREST WEST AFRICAN DIET TYPE

• Alkalinizing (Powerful reducing agents).
• Ketogenic (generates ketone bodies); replace glucose for brain metabolism
• Bioelectrical Modulation e.g. Lauric and acid/convulsion; Phe and SCD
CONCLUSIONS AND RECOMMENDATIONS

• “Nku di na mba n’eghere mba nri!
• The resources of any people is sufficient for their existence.
  • Ofe nne onye siri n’akacha uto!
• The cuisine of any people is, to them, the best in the world.
  • Onye riama oria tansip, asi ya gaa rima nri vileji!
• One that suffers from a modernization disease is advised to
go eat foods ancestors ate”.

The above wise sayings are part of a cultural recording of the need for any people to stay close to whatever they are adapted to; and to change only for very, well considered, good reasons. The West African Forest People, after millennia are, genetically, adapted to their Yam-Palm food culture, and the inherent bioactive factors. The key biochemical functions of their foods; such as Biotin, Thiocyanate, capsaicin, and Lauric acid; are geared to managing their acidic body; shown, in the extreme, by SCD. Deviation from their indigenous foods to, so-called, modernization ones, as shown in the experience of the African Diaspora, in the Americas, has resulted into, so-called, modernization diseases; obesity, hypertension, kidney disease, diabetes, cancer, etc., at a much higher level, than among the Europeans, who just modified their own food
The liberal consumption of such alien foods as gluten-rich wheat and lactose-rich milk, and ‘soft drinks’, which are documented to create ill-health among the African Diaspora, should be discouraged among the West African Forest People, by the imposition of health-taxes. A policy of potassium salt supplementation and consumption should be instituted. Consumption of indigenous foods, with well-known healthful functions, should be positively encouraged; and their production subsidized, if need be.