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Ecotechnology for fisheries and mankind

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Abstract
Environment-sensing and its editing are feasible for every fish to breed naturally and derived from the digital rules in a newer environment of natural fisheries that are being studied for years by the author and being communicated. All we know is that every species has got a certain range of water qualities. In such domain, there may be a sub-domain that every fish species needs a lower to lowest environmental stresses when the species breed naturally. Primarily a minimum Total Dissolved Solids (TDS) prevailing in an Ecology can facilitate the natural breeding of the species. In repeated fisheries experiments for years, the author revealed that all inland species may naturally breed within 165 to as low as possible ppm of Total Dissolved Solids (TDS) of any Ecology waters. A recent hypothesis is that when *Mystus gulio* is usually grown in the range of 160 to 205 ppm of total TDS, when brought to a mere TDS 100 ppm, species successfully can breed even in off-seasonally or other than usual breeding seasons. The science behind this is that minimum TDS provides minimum optical densities of water-bearing minimum ionic stresses. It can be measured digitally. In recent years authors have also found that fish growth and their fecundity both have got linearly a negative correlation with TDS and CEC applicable for every animal, including fish species. Other reveals are that the yellow river with sands maybe than the grey river with clay in terms of natural breeding of fish species and their fecundities with ionic perspectives.

Keywords: Low to lower digital-TDS, Low to lower digital-CEC, natural breeding of fish species, digital rules in fisheries

Introduction
In our language phonetic, the terminology ‘gene’ may mean ‘already known’ the fact. Since we all may know that every gene-expressions may be regulated based on environmental features existing in surrounding environments. These environmental inputs may help in the synthesis of enzymes for genetic materials or each segment of DNA or codon and consequently the central dogma featuring a phenotype. Under changing environments or in an environmental inputs, materials or effects may control gene expressions or phenotype may change. The author has Botanical plantations of *Artrocarpus* plants within Aracanut plants environment in due time all the *Artrocarpus* plants featured like Aracanut plants phenotypically according to prevailing environments may reveal that environment may be the everything in gene expressions and phenotype. Cation Exchange Capacity has a great role in fisheries, especially in growth and fecundity (Das, 2020) [4, 5] established regression models with CEC and fish fecundity (Das and Das 2020) [6] revealed. This same parameter has a great controlling factor in other animals, and probably in all species of the animal kingdom. Owing to environmental in anthropological studies, we find that superhuman species, including primates can attain height according to the existing environments of soil CEC and electrolytes that may control a deviation as per the natural law can be performed digitally. On a daily basis, food habits of quality electrolytes can enhance the height as these added electrolytes act internally within cellular environments to suppress the external environment. Often found that under moist climates, oval cells have become more in ratio than the long cell found more under comparatively dry environments both found in plants and animals. It happens that dryness trends to low CEC and whereas wet trends to high CEC of any environment found often. On a matter of natural trends, if anyone is reluctant to measure or tell the height by natural digital rules, prediction of height becomes possible. In recent years a study found, (Emamgolizadeh *et al.*, 2015) [10] that there may be an environmental gene expression that CEC might have a controlling feature.

Recent studies also found that any gene expression is based on Ecology. (Sarah *et al*. 2020) [11]. Related to this trait any fecundity of any Fish may be Environmentally Controlled and Values are Negatively Correlated Both with the 'TDS' and 'CEC' and accordingly, fish may migrate depending on Total Dissolved Solids (TDS), Cation Exchange Capacity (CEC) has roles in migrations of species are also being studied (Das, 2020) [7, 8, 9]. During the global warming days, a vast water resource prevailing is the consolation worldwide. This fishery may be a must-go practice when water gets polluted, as most fishes can clean water in a better way inland or under any conditions. Present communication dealt with a digital application in fisheries. In recent days we find fisheries in a digital-go. In natural fisheries, every fish species has a certain range of osmotic pressures to breed naturally. For example, IMCs breed naturally when the osmotic pressures of an ecological-waters prevail in the range of a low osmotic pressure, equivalently the ecological Total Dissolved Solids (TDS) varying 100 to 120 ppm found digitally. Also studied is that all other inland species of freshwater can breed naturally when the TDS prevails below 160 ppm. *Tilapia* spp the exotic in India can breed naturally in a TDS varying 190 ppm or less. A lowering of the value of TDS in Ecological waters is more congenial in natural fish breeding. The Study found that colloid clay particles in aquatic environments may reduce the growth rates both physiologically and reproductive. The study found that egg-laying capacity of fecundity may be negatively correlated with TDS. Other than this important phenomenon, the amount of egg-laying capacity or fecundity greatly varies with the environment. In inland fisheries fecundity of individual fish species may be better when there is a sandy bottom ecological environment, a higher value of CEC cation exchange capacity (with a range of 0 to 200 meq) of clay at bottom-soil or suspension particles may be deleterious to the egg-laying capacity and extent of CEC value may negatively correlated with egg-laying capacity, with individual species. As per a study with various species, *Puntius spp* closer to clay has a range of fecundity 300 to 1000, whereas *Glossogobius giuris* has the value doubled and more, a *Seabass* closer to the sandy environment has got natural TDS to breed, values below 250 ppm on a sandy bottom with fecundity manifolds, ranging around 10 [7].

Methodology

Total Dissolved Solids (TDS) is measured with the optical density of spectrophotometer or satellite remote sensing imageries (Das, 2020), and accordingly, for an example in fisheries, there are migrations and habitats found (*Das, 2020*). Soil moisture is measured with a moisture meter, and a total of positively charged electrolytes are measured based on charged particles as synonymous to CEC and CEC prevailing with soils, colloids, and any environment controlling phenotype or gene expression on a Hypothesis. May the Few Rules in Digital-Fisheries *viz*. Growth & Fecundity are Negatively Correlated with 'TDS' and 'CEC' and Approximated Linear Models. Communication dealt with a few digital rules in fisheries, along with linear models that are described according to the environments persist. As already known in natural fisheries, every fish species has got a certain range of osmotic pressures to perform to breed naturally. For example, IMCs breed naturally when the osmotic pressures of an ecological-waters prevail in the range of a low osmotic pressure, equivalently the ecological Total Dissolved Solids (TDS) varying 100 to 120 ppm found digitally. Also studied is that all other inland species of freshwater can breed naturally when the TDS prevails below 160 ppm. Tilapia spp the exotic, can breed naturally in a TDS varying 190 ppm or less. A lowering of the value of TDS in Ecological waters is more congenial in natural fish breeding. Studies found that colloid clay particles in an aquatic environment may reduce the growth rates both physiologically and reproductive. The study found that egg-laying capacity of fecundity may be negatively correlated with TDS. Other than this important phenomenon, the amount of egg-laying capacity or fecundity greatly varies with the environment. In inland fisheries, fecundity of individual fish species may be better when there is a sandy-bottom ecological environment, a higher value of CEC cation exchange capacity (with a range of 0 to 200 meq) at bottom-soil or suspension particles may be deleterious to the egg-laying capacity and extent of CEC value may negatively correlated with egg-laying capacity, with individual species. As per a study with various species, *Puntius spp* closer to clay has a range of fecundity 300 to 1000, whereas *Glossogobius giuris* has the value doubled and a *Seabass*, closer to the sandy environment has got TDS to breed, values below 250 ppm on a sandy bottom with fecundity manifolds, ranging around 107. Present communication also dealt with an average *Tenualosa ilisha* with a fecundity range of 10 to 20 Lacs and its successful hatching (Y) tends to be negatively correlated with TDS (X) and given an algorithm, $Y = -14865*X + 3E+05$ ($R2 = 0.8176$), as this species preferably breed naturally in a range of TDS (X), having a very low ppm to near 110 ppm. Whereas fecundity (Y) may again negatively correlated with CEC(x) in most *Pontius spp* and approximated linear model $Y = -15.406*X + 3370.8$, $R^2 = 0.99$. Fecundity of fish may be environmentally controlled, found negatively correlated with 'tds' and 'cec', just given an algorithm for *Tenualosa ilisha* During the Global warming days a vast water-resource prevailing is the consolation worldwide. The situation makes fisheries may be an obvious choice to many people. These fisheries may be a must-go practice *when water gets polluted, as most fishes can clean water in a better way* inland or in any conditions. Present communication dealt with a digital application in fisheries. In recent days we find fisheries in a digital-go., In natural fisheries, every fish species has got a certain range of osmotic pressures to perform to breed naturally. For example, IMCs breed naturally when the osmotic pressures of an ecological-waters prevail in the range of a low osmotic pressure, equivalently the ecological Total Dissolved Solids (TDS) varying 100 to 120 ppm found digitally. Also studied is that all other inland species of freshwater can breed naturally when the TDS prevails below 160 ppm. *Tilapia spp* the exotic, can breed naturally in a TDS varying 190 ppm or less. A lowering of the value of TDS in Ecological waters is more congenial in natural fish breeding. The study found that colloid clay particles in an aquatic environment may reduce both physiologically and reproductive growth rates. The study found that egg-laying capacity of fecundity may be negatively correlated with TDS. Other than this important phenomenon, the amount of egg-laying capacity or fecundity greatly varies with the environment. In inland fisheries, fecundity of individual fish species may be better when there is a sandy-bottom ecological environment, a higher value of CEC cation exchange capacity (with a range of 0 to 200 meq) at bottom-soil or suspension particles may be deleterious to the egg-laying capacity and extent of CEC value may negatively correlated with egg-laying capacity, with individual species. As per a study with various species, *Puntius spp* closer to clay has a range of fecundity 300 to 1000, whereas *Glossogobius giuris* has the value doubled and a *Seabass*, closer to the sandy environment has got TDS to breed, values bellow 250 ppm on a sandy

bottom with fecundity manifolds, ranging around 10 [7]. Present communication dealt with an average *Tenualosa ilisha* with a fecundity range of 10 to 20 Lacs and its successful hatching(Y) tends to negatively correlate with TDS (X) and given an Algorithm, Y=-14865*X +3E+05 (R^2=0.8176).

Results

In the scientific communications of digital domains, Fig. 1 to Fig. 5 narrated with footnotes have described the roles of Cation Exchange Capacity in Tallness or dwarf ness of either in plants or animals. Cation Exchange Capacity may not be the only parameter found as a principal parameter in environmentally controlled gene expressions. This has got a relation with TDS in waters which may be an important parameter in fisheries biodiversity to perform natural habitats. Authors are with opine that environment editing may help us in obtaining a desired phenotype and ambitions. We may know males are taller than females of similar ages owing to water biophysics (Das, 2013) [3]. In fisheries, we found that most fishes may need a lower osmotic pressure to perform natural breeding (Das and Sharma, 2015) [2]. Concluded that all Phenotypic care of the Nature can be presented with Digital rules of Tallness and Dwarf-ness, Environmental gene expressions using Computer and electronics in better mankind. In this research study, average data are being considered on different environments of the extremity of West Bengal of Indian conditions.

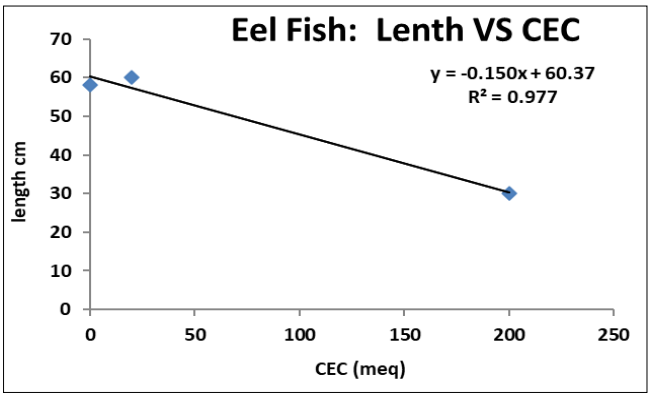

Fig 1: Low to lower digital-TDS and Low to lower digital-CEC led to the Natural breeding of Fish-species Digital rules in Fisheries. with *Eel* growth.

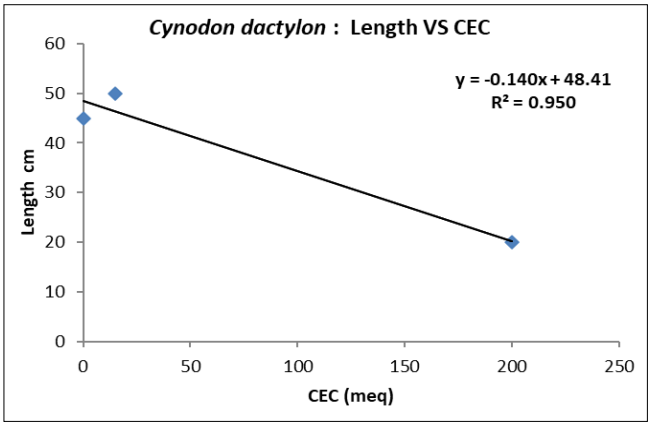

Fig 2: Low to lower digital-CEC led to dwarf to tallness in plants and animals as Digital rules exampled with *Cynodon dactylon* growth

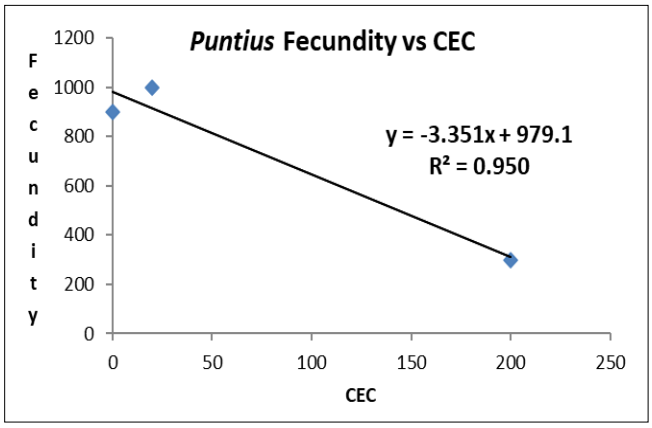

Fig 3: Low to lower digital-TDS, Low to lower digital-CEC, led to inducing Natural breeding of Fish-species *Pontius spp.*, a digital rule in Fisheries.

The stochastic model between CEC values with *Puntius spp* Fecundity in Phenotypic care of the Nature of Digital rules of Tallness and Dwarf-ness denoting Environmental gene expressions, using Computer and electronics in mankind.

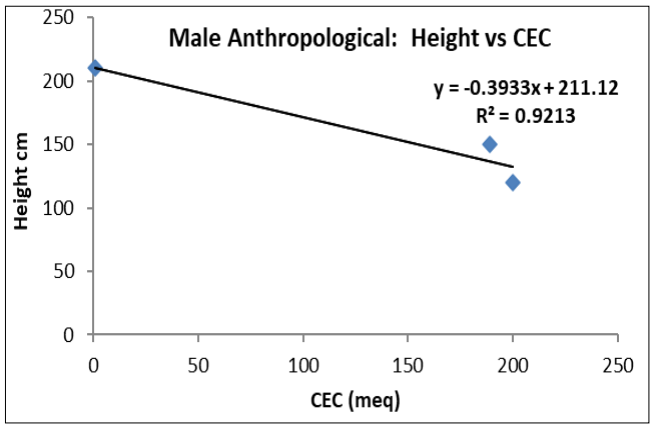

Fig 4: Low to lower digital-CEC led to dwarf to tallness in the animal kingdom a digital rules in mankind

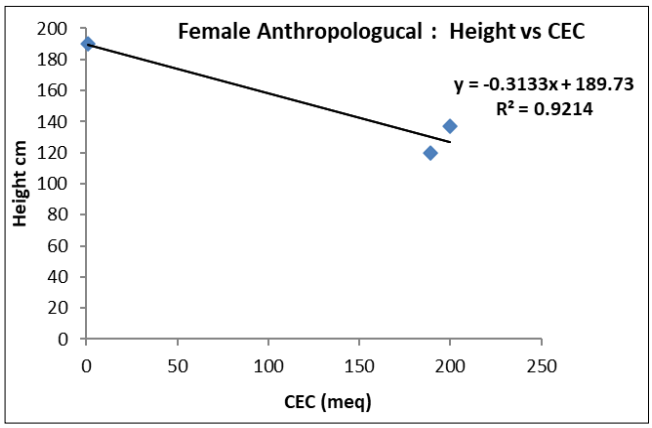

Fig 5: Low to lower digital-CEC led to dwarf to tallness in animal kingdom digital rules in womanhood

Discussion

Eco-technological measures with computer and electronic devices are being used in recent days and measuring soil and water qualities, photo intensity by a photometer, Total Dissolved Solids (TDS) by TDS meter, soil moisture contents

in soils by moisture meter, Cationic Exchange Capacity (CEC) of environments by soil electronic and tensiometer are easy processes we may perform and these are being considered electrolyte as well in the environments. We concluded that digital rules can make our life very easy and simple and any obstacles we can overcome accordingly or obey the natural rule in this digital era. Tribal people in every country live in places where the CEC value may remain very high, hence as per natural digital rules they may not be much taller compare to city dwellers although the phenomenon of intelligence may remain higher. Gods may help to make the environment and man can change according to the need of man-kinds. Hence may be concluded that every gene-expressions are based on environmental properties for both plants and animals and this can be measured digitally. There may be multiple environmental parameters controlling the phenology of tallness and dwarf-ness, both either in plants and animals, however, the Cation Exchange Capacity (CEC) may be the Principal environmental component controlling these mentioned phenotypic traits. Found that the CEC has negatively correlated with the Tallness character of both plants and animals and has linearity in relations. As instances found in fisheries, the species *Eel* that may attain a length around 30 cm. on maturity when the CEC value is around 200meq, the same species can attain a length almost double say 60 cm when the environmentally CEC value persists around 20 meq. In the plant kingdom, instances found that usually, plants are taller in dry climates, whereas, the same cosmopolite plants are dwarf in moist climates, owing to persisting electrolytic phenomenon. Evidence shows that *Cynodon dactylon* may get stem elongation around 50 cm annually when the CEC value may persist around 15 meq, whereas the same species can attain a mere 20 cm when the CEC value persists around 200 meq. May concluded that the same phenomenon happening in variable environments having with different CECs in very long or short runs, in every anthropological study in higher-animals following the similar digital traits and kind and environmental, behaves of gene-expressions for either tallness and dwarf-ness maybe every living individuals, plants (Das, 2013) [1], or may all animals too in this earth. Low to lower digital-TDS and Low to lower digital-CEC are tremendously helpful in the Natural breeding of Fish-species and optimum species fecundity can be estimated with the digital rules in Fisheries with all environmental phenomena. The latest Eco-technology can be often superior to either a fresh eco-technology or refreshed ecotechnology according to environment editing and the desiredness in fisheries and mankind unless all we go for hi-tech gene-editing, which may not environmentally be supported.

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References

1. Debabrata Das. Male is often taller than females of similar ages in the animal kingdom on water bio-physics. Journal of Interacademicia. 2013;17(2):350-352
2. Debabrata Das, Sharma AP. Fishes need lower osmotic pressure to breed naturally and are detectable by an osmometer, analog to a digital computer. International Journal of Fisheries and aquatic studies. 2015;3(2):10-11.
3. Debabrata Das. The water biophysics in the statistical study of fish genders length variations. International Journal of Fisheries and aquatic studies. 2015;2(4):117-119.
4. Debabrata Das. Digital Rules say, Growth & fecundity of any Fish are negatively correlated with TDS and CEC proc E-Book Abstract of SCSI India National Web Conference. Sustainable Soil and Water Management for Biodiversity conservation, food security & Climate Resilience, 2020.
5. Debabrata Das. The fecundity of any fish may be environmentally controlled and values are negatively correlated both with the TDS and CEC. ISCA Webinar Book of abstract, International Symposium on Coastal Agriculture: Transforming Coastal Zone for sustainable food and become security 16-19th March 2021 Organized by ISCAR, Canning Town, West Bengal India, 2021.
6. Debabrata Das, Rajendranath Das. May the few rules in digital fisheries *viz*. growth and fecundity are negatively correlated with TDS and CEC and approximated linear models. ISCA Webinar Book of abstract, International Symposium on Coastal Agriculture: Transforming Coastal Zone for sustainable food and become security 16-19th March 2021 Organized by ISCAR, Canning Town, West Bengal India. 2021.
7. Debabrata Das. A Remote Sensing Application in Extended Fisheries Research. J. of Marine Science Research and Ocean. 2020;3(2):35-37
8. Debabrata Das. Species Migration and Conservation of Hilsa (*Tenualosa ilisha*) Ray fish using Digital Techniques J. of Marine Science Research and Ocean. 2020;3(2):42-45
9. Debabrata Das. Computer & Electronics Can Prove to Root the Centre of Life, stem Dynamics May Flower Proportionately in any Geography. International Journal of Innovations in Agriculture White Science Journal. UK. 2020;2:37-44
10. Emamgolizadeh S, Bateni SM, Shahsavani D, Ashrafi T, Ghorbani H. Estimation of soil cation exchange capacity using Genetic Expression Programming (GEP) and Multivariate Adaptive Regression Splines (MARS). Journal of Hydrology Elsevier. 2015;529(3):1590-1600
11. Sarah K. Lamar, Ian Beddows, and Charlyn G. Partridge· Examining the molecular mechanisms contributing to the success of an invasive species across different ecosystems. Ecol Evol. 2020 Sep;10(18):10254-10270.