



Research Article

SOME TRADITIONAL AND INNOVATIVE APPROACHES FOR BIODIVERSITY CONSERVATION

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Abstract: In order to study the mode of gene action for sheath blight resistance and yield related traits a cross was made. Five populations viz., P₁, P₂, F₁, F₂, and F₃ were derived from the cross between high yielding susceptible rice variety 'Swarna sub-1' and resistant line 'Tetep'. The sheath blight susceptible high yielding variety Swarna sub-1 showed high disease severity (60.46%) compared with resistant parent Tetep (17.72%) whereas intermediate disease severity was observed in F₁ and three segregating populations. Among F₁, F₂ and F₃ population, F₁ showed less disease severity (20.09%) than F₂ and F₃ populations. The Swarna sub-1 recorded higher grain yield per plant compared with Tetep while the F₁ yielded more grain yield compared with the donor parent but less than the recurrent parent, but in the two segregating populations (F₂ and F₃), grain yield per plant were intermediate than non-segregating generations. All the traits related to yield as well as sheath blight resistance were significant in either one of the scales or in combination representing the existence of epistatic interactions between the genes involved. The dominance (h) and dominance × dominance (l) gene effects displayed opposite sign for the traits number of reproductive tillers per plant, plant height, days to maturity, length and breadth ratio after cooking and gel consistency indicating duplicate epistasis while complementary for days to heading, panicle length, weight of panicle, number of spikelets per panicle, test weight, yield per plant, length and breadth ratio before cooking, amylose content and per cent disease severity.

Keywords: Information and Communication Technology, Environmental Ethics, Sustainable development

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Introduction

Education, participation and capacity-building to halt the loss of biodiversity and forest is essential. It is widely accepted that biodiversity loss is happening globally. Its nature and causes need far better public understanding and learning in order for it to be stopped. This study revealed the plenty of educational uses of traditional approach and modern Information and Communication Technology in biodiversity conservation. Biodiversity is the vast array of all the species of plants, animals, insects and the micro-organism inhabiting the earth either in the aquatic, aerial and the terrestrial habitats. The human civilization depends on Global Ecosystem i.e., for the maintenance of Hydrological Cycles, Bio-geochemical cycles and Oxygen –Carbon di oxide cycle. This biodiversity is the condition for the long term sustainability of the environment, continuity of life on earth and the maintenance of its integrity. Biodiversity is a compound word derived from 'biological diversity' and therefore is considered to have the same meaning. Each and every species on earth has a unique and peculiar genetic material. The presence of life forms on various levels within the biosphere and their interrelation and interdependent thus calls the need of sustainable management which assures balance at every level and prosperity of all life forms. Which otherwise would lead to disastrous effects threatening the whole life on earth and the ecosystem [1-5].

Review of Literature

Conservation Principles are the Main Source of traditional Knowledge in Ancient Texts. From ancient time environmental principles were designed in order to comprehend whether or not the intricate web of nature is sustaining itself. These principles roughly correspond with modern understanding of conservation, utilization, and regeneration of environmental elements. The flora of the planet earth constitute the main elements of ecosystem thereby provides ecosystem service those are essential for the sustenance of human life.

The very fact that tress is indispensable for the continuity of life on earth make their protection even more important. "The God who exist in the Universe, lives in air, water, in fire, and also in tress and herbs, men should have reverence for them" (Upanishads, 1500-600 B.C.); "So long as this earth is full of nature (wild animals and plants), human race is going to flourish" (Charak Samhita 4th -5th Cent. A.D.); "There is not an animal that moves about on the earth, nor a bird flies on its wings, but are communities like you, so have reverence for them" (Quran, 6:39 QZ); "even as the green herb have I given you all things" (Holy Bible, genesis 9:3); "The universe along with its creature belong to the Lord. No creature is superior to any other. Human beings should not to above the nature. Let no species encroach over the rights and privileges of other species" (Iso-Upanishads, 1500-600 B.C.). "Man does not has the right to destroy what he cannot created. The human's race is not an alien species to exploit it". The pace of development and ecologically destructive nature builds up a serious threat and challenges for ecosystem services due to a wide array of reasons whose repercussions are quite drastic, dynamic and multi-dimensional. Unprecedented growth, overpopulation and industrialisation complemented with over consumerism creating epistatic effects. Balance exists between ecological processes and human activities such that human activities reinforce ecological health and *vice -versa*. The people who are dependent on the ecosystem have a key role in setting priorities and in project implementation. The forests are declining at a very fast pace may build a catastrophic situation. In India, researchers from four Bangalore-based bodies Ashoka Trust for Research in Ecology and the Environment (ATREE), Wildlife Conservation Society, Institute of Science and Indian Institute of Science participated in the analysis. Besides Nature Conservation Foundation, Mysore; Wildlife Institute of India, Dehradun; World Wide Fund for Nature (WWF), New Delhi; Pondicherry University,

Pondicherry; Centre for Cellular and Molecular Biology, Hyderabad and Vesta B in Thane, Maharashtra also contributed to the global study. according to the global analysis. "The strongest predictors of declining reserve health, as outlined by the analysis, were habitat disruption, hunting and forest-product exploitation. Environmental changes directly or indirectly influence the entire ecosystem through an inter-connected and inter-linked series which even exhaust the natural reserves. The indispensable relationship of flora and fauna including the human being once disturbed drastically due to biodiversity loss would have their repercussions long lasting about which we would repent. In India, researchers from four Bangalore-based bodies Ashoka Trust for Research in Ecology and the Environment (ATREE), Wildlife Conservation Society, Institute of Science and Indian Institute of Science participated in the analysis. Besides Nature Conservation Foundation, Mysore; Wildlife Institute of India, Dehradun; World Wide Fund for Nature (WWF), New Delhi; Pondicherry University, Puducherry; Centre for Cellular and Molecular Biology, Hyderabad and Vesta B in Thane, Maharashtra also contributed to the global study. According to the global analysis, the strongest predictors of declining reserve health, as outlined by the analysis, were habitat disruption, hunting and forest-product exploitation. Environmental changes like climate change, deforestation and degradation of forests, habitat loss, over exploitation of natural resources at a very fast rate, changes in the composition of floral components in the ecosystems *i.e.*, introduction of invasive species and decline in native species composition of the ecosystem, increasing rate of pollution etc, are linked ecologically to their surrounding habitats, and could sharply increase the likelihood of serious biodiversity declines [2].

Results

This paper is mainly focusing on the two main issues *i.e.*, first one is Traditional knowledge and second issue is Innovative knowledge in biodiversity conservation. Educational uses of Information and Communication Technology (ICT) has its own importance and cannot be neglected as it is the part and parcel of the lives of human beings. Modern economy is dependent on innovations, and schools colleges as part of societies ought to use and promote innovations, whenever it is also educationally valuable. The Internet, U- tube, World Wide Web (WWW) and Global Internet System (GIS), *etc.*, are examples of such innovations, and have plenty to offer to Biodiversity Education to conserve, monitor and promote biodiversity wealth of global ecosystem. If we include Internet, World Wide Web (WWW) along with other media such as Television, radio, periodicals and newspapers, will have practically connected the whole of humankind. The whole of humankind can learn to conserve and promote biodiversity. A more presently -oriented innovative approach is use of the WAP Browser, U-tube *etc.*, technology as part of Mobile phones. Technology has improved so rapidly that mobile-phones today facilitate the integration of small WAP Browsers. In 2-5 years this will be much more efficient and applicable anywhere. This could become an interesting area for future "public biodiversity monitoring" (for instance: monitoring of biodiversity). Modern mobile technology can be used also in nature to give young and adult people an understanding of biodiversity and we should make the use of technology to save the biodiversity to circulate the traditional knowledge among the people *i.e.*, environmental ethics and simple maps where observations can be charted via Mobile computing. It is appreciable to implement GIS and modern mobile phones with digital cameras in promoting biodiversity education. Many educational networks or nature-oriented networks exist (as part of the formal or informal education sector for youth and adults) which relate their activities to "biodiversity" in one way or the other. These networks should become more aware about "Biodiversity" as a topic. some networks are linked to biodiversity and nature and impart clearly scientifically driven knowledge. Global Internet System (GIS) is a practical tool, and is becoming very important also in Biodiversity Education and we cannot ignore the potential importance for biodiversity education. With respect to WAP technology, I can mention the interesting development of Artportalen in Sweden on mapping, and the work of ETI biodiversity centre on species identification with WAP technology in mobile phones. From this perspective, environmental knowledge as well as offering opportunities for value building by traditional and innovative methods and nature experience needs to be integrated into a wider framework of development of eco-

friendly orientation of a human beings and decision-making in real world situations.

Discussion

The topic is fairly broad and has many facets. This is a difficult task in real life. Undoubtedly young and adult people should have a vision and mission for biodiversity conservation. Biodiversity "needs a face" and "biodiversity conservation is a national mission". The most unique feature of Earth is the existence of life in numerous diverse forms. Approximately 9 million types of plants, animals, protists and fungi inhabit the Earth including the human -beings. Environmental crisis is in reality the crisis of ethics. We are over-exploiting our rights and failing in fulfilling or performing our duties towards the environment. Nature has provided us with all the resources for leading a beautiful life. She nourishes us like a mother, we should respect and nurture her. All the above issues are subject matter of state policy of any country where are ethics in pure subject is matter of individual level of understanding. However with social compulsions unethical acts can be minimized. We can start measuring the status of a society by the percentage the people of ethical values and courage in order to mount social compulsion for checking unethical acts. We can enlist possible hide outs of unethical acts. The distribution of the resources of the world should be egalitarian as far as possible. All men are equal. For all there should be equal opportunities to compete for the comforts and riches of the world. The 'rights' of the environment and natural resources should take precedence over the right of individuals as they are linked to the welfare of the entire biosphere. The conservation of genetic Pool of all life forms is essential for industrial innovation and a matter of moral principle. Ecological restoration needs to address four elements *i.e.*, Improve biodiversity conservation; Improve human livelihoods; Empower local people and Improve ecosystem productivity. Sustainable development and Ecological restoration are the two keys for conservation biodiversity and ecosystem throughout the world. Millions of years of evolution have created a wealth of structures and mechanisms at the molecular, cellular and macro-structure level, all of which function economically and interact, to perfection. Nature provides solutions to most of life's technical problems. "Natural selection" has imposed on living organisms the "Min-Max Principle" *i.e.*, a minimum of material and energy accomplishes a maximum of efficiency and stability. This makes biological prototypes particularly important for our future given the world's resources and a solution to increasing environmental problems. Protection and preservation of the air, soil, water, Biodiversity *i.e.*, human beings flora & fauna and other important constituents of ecosystem has become essential for the existence of human-kind. Two key characteristics of these systems are that the unit of nature is often defined in terms of a local ecosystem. In an ecosystem abiotic components, plants, animals, and humans are considered to be interlinked, interdependent and interrelated. Exploitation of the natural resources by humankind at a greater rate does not allow normal regeneration under natural environmental conditions; this leads to the rate of degenerative process greater than the degradative capacity of the earth global ecosystem. The concept recognizes that the well-being of human society is closely related to the well-being of natural ecosystems.

Conclusion

The Biosphere of the living Earth is composed of the Lithosphere, the hydrosphere and the atmosphere. To maintain the sustainability of biodiversity on the planet earth, we ought to concern the holistic approach towards the environment conservation and sustainable development. Both the Traditional and innovative approaches are the back bones of value education which get attributed by the knowledge of local and tribal people those are the integral part of sustainable management. It is not very tough to make the people aware of the environmental knowledge that we have gathered so far but real challenge is to develop ethics. It is very clear that we lack more in ethics than in knowledge environmental education, thus must consist of both knowledge and ethic. Ethics are necessary in order to ensure desired practice in all human being of all ranks. For this an equilibrium is to be established among Formal education, inspirational education, Fear less education, penology.

The overall purpose of environmental education is to develop a person in order to follow, inspire others to follow, influence other to follow and prevent others from violating the law designed for protection of our environment. At all environmental literacy should be ensured to all human beings for their active participation in day to day happening, scientific developments and its consequences, formation of environmental law etc. In order to make each of us accountable for present growth of human beings. Development at the cost of environment can take place only up to a point. Beyond that it would be like foolish man in the story who was cutting the very branch on which he sat. There is a need of holistic understanding of the relationship between the environment and the development processes taking place in the world. It has become the need of the hour to expand and evolve approaches to twenty- first century to phytobiodiversity conservation' and to strictly follow the "global-environmental ecosystem approach Implementation" [1,3-5]. In the future, it may be that biodiversity can be also being maintained and even promoted if the public learns the best theories and practices (Traditional and Innovative Practices) of what to do and what not to do.

Application of review: Information and Communication (ICT) system along with its components is able to creates knowledge for protecting, monitoring and promoting biodiversity.

Review Category: Biodiversity Conservation

Abbreviations:

ICT: Information and Communication Technology

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References

- [1] Garg J. (2017) *The Journal of the Meerut University History Alumni (MUHA)* Vol. XXIX, 126 – 131.
- [2] Lurance W. F., et al. (2012) *Nature*, 489(7415), 290-4.
- [3] Garg J. (2015) *Proceeding International Seminar 19-20 Des (2015) Our Environment-Yesterday, Today and Tomorrow org. Paryavaran Mitra Samity in association with U.P. Pollution Control Board, Moradabad*, 157- 160.
- [4] Garg I. and Garg J. (2015) *Proceeding International Seminar 19-20 Des (2015) Our Environment –Yesterday, Today and Tomorrow org. Paryavaran Mitra Samity in association with U.P. Pollution Control Board , Moradabad*, 217- 219.
- [5] Garg J. and Gupta S. (2016) *The Journal of the Meerut University History Alumni (MUHA)* Vol. XXCVIII, 199 -207.