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Flora's Dieback: Reality or Mystery of GRENE Syndrome

MAHBOOB ELLAHI
Planning and Development Department, Government of Punjab, Lahore–Pakistan
E-mail: ellahi_1@yahoo.com

ABSTRACT

This study is mainly focused on observing morphological symptoms of the flora subject to the dieing and drying process. Thus, it is based on a review of existing literature on the subject and a purposive selection of flora and fauna involved, directly or indirectly, in the scenario being researched into. The Lahore city was taken as universe and flora were selected in a way that maximum variation in morphological features may be captured. It was established by the author that the real cause of flora's dieing and drying are non-traditional pathogens namely extra-natural organisms (ENOs), which are non-contagious like AIDS, affect exposed xylem tissues, remain therein, and lead to a GRENE Syndrome for which no treatment is discovered as yet. This issue is challenge for the biological scientists to analyze the ENO affected plants from the point views of anatomy, physiology, bio-chemistry and many other issues mentioned in this study. Especially, involvement of experts on physical, chemical, electronic and others subjects may be helpful to understand the GRENE Syndrome, which merits a multi-disciplinary approach for its analysis, diagnosis and to discover the remedial measures.

Key Words: Flora's dieback; Reality; Mystery; Grene syndrome

INTRODUCTION

In preface to his universal thoughts on Islamic ideology, Iqbal (1934) remarked that the modern man believes in observing events and developing concrete thought to live with so called invisible alienates. In his first three lectures of the series delivered in the Southern India, Iqbal (1934), emphatically, said that religion (Islam) is not a faculty's department, but is a set of all faculties in versatile schools of thought and leaves no room for any cause-effect relationship being unexplained. The discussions of Iqbal (1934) were heavily focused on the rational metaphysical power (RMP), which is the Almighty itself versus the irrational (*Iblis*) metaphysical forces (IMF) with a firm faith that all causes and effects of these two are observable and amenable to scientific analysis. Prior to Iqbal (1934), Wali-Ullah (1750-1760) discussed the both, being explainable, continuous in their functions and thus, subject to scientific observation, measurement and analysis. Above all, the revelations, both from the Holy Quran [Almighty, *Dahr* (Time)] and the Hadith, of the Holy Prophet Muhammad are precisely scientific in *Dahr*. Having been motivated from the sacred personalities, the author, despite being inadequately qualified in the biological sciences, attempted to present a few observations on the subject to attract attention of the technical experts for a scientific analysis of the contemporary and critical issues.

The environmental crisis is prominently noted in the global scenario and developing countries are especially affected due to paucity of resources and institutional failure to cope with rapid degradation. The guided, restricted and extra-natural environmental (GRENE) problems, given under a limited control of the IMF are as old as role of the same in bringing mankind to this planet. Obviously, intellectual growth of the IMFs', by virtue of their being metaphysical, has been faster than that of the human beings. For instance, the technologies, namely ultrasound, test tube babies, cloning, etc., although physically developed recently, but conceived in a far more sophisticated way by the IMFs prior to 1920s {see, e.g. Javed Nama (Iqbal, 1930a)}.

The RMP, although having its own procedural limitations, delivered a very effective check through the Holy Prophets, especially Hazrat Ibraheem and Hazrat Musa peace be upon them (PBUH), a series of them till Hazrat Essa Ibne Marium (PBUH), Hazrat Muhammad (PBUH) and Twelve *Mujaddids* with Hazrat Shah Wali-Ullah (RH) as the last. Sir Syed Ahmad Khan's efforts were also high ranking, but a very potent GRENE force, originated in second half of the 19th century, parallel with technological developments, entered the 21st. This was hardly felt by the masses, but very popular panacea among the intellectual elite, despite its miserable effects.

This study is mainly focused on observing morphological symptoms of the flora subject to the dieing and drying process. Thus, it is based on a review of existing literature on the subject and a purposive selection of flora and fauna involved, directly or indirectly, in the scenario being researched into. The Lahore city was taken as universe and flora were selected in a way that maximum variation in morphological features may be captured.

Morphological features reviewed. The eucalyptus (*Eucalyptus globulus*) *die back* was noted and widely discussed in Australia during late 1970s and early 1980s, which contradicts with later recommendation (Gill, 2004) of growing it on account of being resistant to die-back. It is generally claimed that infection enters into a plant from

injured tips of the branches, which start *dieing back* until the entire plant does so. Khan (2004) opined that *dieing back* is not merely a disease, but a syndrome with multiple causes and symptoms. After a visit to Australia, Jamil (2004) reported that the scientists are still working on die-back and root rot diseases, which are claimed to be caused by *Phytophthora cinnamomi* and effectively suppressed by using composted farm yard manure (FYM) from chicken origin to activate microbial activities.

In Pakistan and other countries of the sub-continent, such as India, Bangladesh, Bhutan and Nepal as well, the disease came to surface with a large scale appearance of partial or complete drying of *Shisham* (*Dalbergia sissoo*) (claimed to be a cancerous disease) in late 1990s. The start of problem, claimed to be caused by fungi, namely *Ganoderma lucidum* and *Fusarium* Species, is reportedly dating back to the late 19th century in a sporadic way, but not wide-spread. The Punjab Forestry Research Institute (PFRI) confirmed the existence of *Ganoderma lucidum* as main causal organism (Afzal, 2004), but the University of Agriculture Faisalabad (UAF) viewed that Pin Hole Borer and Horn Beetle were causing the problem (PFRI, 2004).

Chaudhry and Ahmad (2004) reported spreading of the said disease to Kikar (*Acasia nilotica*), Semal (*Salmalia melabericum*), Mango (*Mangifera indica*), Citrus species, etc. growing on farm-lands. Further, the disease pattern is shown to be atypical, such as vertical tree division with one each green and dry wood, thinning of crown, leaves turning yellow or tan coloured, cankers on southern side of trees, exudates of black or red colour, insects attaching main stem and many plants turning completely dead and dried (Chaudhry & Ahmad, 2004). This is reportedly observed among a wide variety of trees in all ages on the campuses of a large number of educational institutions in Peshawar. Disease symptoms reported by Gill (2004) are quite similar to those brought out by Chaudhry and Ahmad (2004). However, additional symptoms included withering of stem/branches upward from infection point, disease moving down with rots and turns, bark splitting and drying followed by infection in roots and collapse of entire plant. Finally, Keerio (2004) reported disease incidence to be as low as about 4% in Sindh, where two third of it related to *Shisham* which is consistent with an overall concern.

Additional morphological features. Apart from the morphological features reviewed above, there are additional ones which merit consideration for a rigorous analysis of the problem. As seen from Photo 1, these include, stem getting zigzag and branches saddle-shaped (*Shisham* Photos 1-1 and 1-2) and atypical in guava, i.e. *Guava juajava* and *Shisham* (Photos 1-3 and 1-4) vertical scratching with wood separation from living part (*Jamun* Photo 1-8) and twisting independently {*Sarv* (*Cupressus torulosa*) and Eucalyptus in Photos 1-5 and 1-6} and around each other (Photo 1-7). Photo 2 shows that projections and bumpy out-growths appear in various cases, such as those of *Simel*, *Shisham*, *Nim* (*Azadirachta indica*), etc (Photo 2-1, 2-2, 2-3 and 2-4). It is also noted that after pruning branch remains are either eaten away by insect or put to microbial decay.

In case of several plants, such as *Simel* (Photo 2-5) branches become flat and oval in stead of being round ones observed in the normal growth process and also different from buttresses, which is natural in *Simel*. Twisted stem with bulges on it {*Jangli Toot* (*Brossonetia papyrifera*) and Eucalyptus Photo 2-7 and 2-8) is an exceptional case, while cankers in case of stem (Eucalyptus Photo 2-8) has already been reported (Chaudhry & Ahmad, 2004). The bark, in some cases is scratched in such away that a variety of erratic and bumpy out-growths appear to give a horrifying impression to the viewers. These observations may be seen in Photo 2.

General Features of the Main Issue

General attributes of IMFs and ENOs. Wali-Ullah (1750-1760) very precisely revealed that IMFs are emotionally enraged and evil-cum-puerility minded. These attributes are outcomes of bio-chemical and bio-active radiation emanating from decaying and rottening organic matter, which belongs to both plant and animal origins. This process takes place more actively at night than in the day light. In Sura-e-Falaq (Al-Quran 610–622), Almighty accepts evil creation by himself in general and human jealousy in particular, which are hidden in the dark, i.e. either in human mind or at night. In Sura-e-Nas (Al-Quran 610–622), Almighty owns the human beings with respect to all basic necessities and it is to be reciprocated faithfully believing in his unity and sole God-hood. More than every thing is to be under His shelter to avoid evil, especially the ones emanating from IMFs and irrational human guide (IGH) misleading the human mind. In essence, darkness is an umbrella for all the evils. Noting more than this, Iqbal (1930b) said, nature wants the man to bring out dawn in front of every dark.

IMFs work through placing extra-natural organisms (ENOs) into xylem tissues of plants. The soil-borne micro organisms, in the presence of moisture and oxygen, convert organic matter into a soluble, but raw, form which is precisely consistent with plant's specific requirements. The raw food in-take is carried by xylem tissues from soil to plant leaves for its refinement through photosynthetic process. The ENOs, for their survival, take a part of raw food and oxygen, release carbon dioxide and other harmful excretions within body of the infected plant and disturb quality and quantum of food delivered to leaves, which leads to environmental degradation as well. Food requirements keep on increasing with growth and multiplication of ENOs and IGH continues building organic matter around infected plant. Thus, soil's porosity is increased to accommodate more oxygen for expediting microbial activity to decompose organic matter, which carries a positive charge (cat-ion) and phosphorus (P_2O_5) carrying negative charge (an-ion) sticks to the

Photo 1. Atypical Stem and Branches

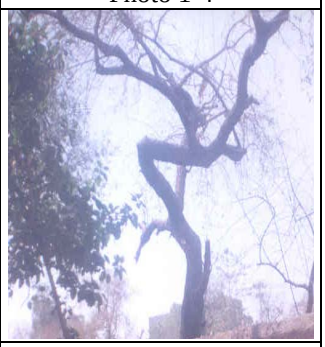
Photo 1-1	Photo 1-2	Photo 1-3	Photo 1-4
			
Photo 1-5	Photo 1-6	Photo 1-7	Photo 1-8

Photo 2. GRENE Syndrome Effects on Stem and Branches

Photo 2-1	Photo 2-2	Photo 2-3	Photo 2-4

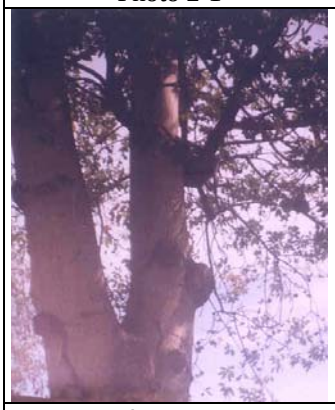



Photo 2-5	Photo 2-6	Photo 2-7	Photo 2-8

former. Thus, P_2O_5 becomes unavailable for infected plant. All these abnormal activities lead to morphological changes, imbalanced food composition and adverse effects on plant health and its physiological functions. As a result, quantum of oxygen released into the atmosphere during photosynthesis is reduced. Thus, ENOs not only affect plant health, but also lead to environmental degradation. These issues are discussed in the forthcoming sections.

Historical background. The author, in discussions with key informants, noted that the problem took start, most probably in early 1889 in Ludhiana and Gurdaspur Districts followed by Amratsar and Ludhiana Districts of Undivided Punjab. This requires planting required trees on objective oriented foundations, which was carried out sometime in the mid-1860s. Therefore, seed imports and irrigated plantation of *Shisham* in 1860s (Bajwa, 2004; Sheikh, 2004) accords with author's finding. It was also noted that *Shisham* dieing was more common for trees grown from stumps and branches.

The starting point for this study for treating die back as a syndrome was based on findings of Khan (2004). Further, the observation (Gill, 2004) of disease moving upward (or more precisely forward) suggests that die back is not an appropriate term. This study recognizes the main issue as an outcome of the GRENE, which came to surface with a large scale appearance of partial or complete drying of *Shisham* in late 1990s in the sub-continent (Pakistan, India, Bangladesh, Bhutan & Nepal) and same issue noted for Eucalyptus in Australia during 1970s. The author has a strong belief that it is caused by ENOs and it is not a local problem, but well-spread through the plant's body as it is carried forward by xylem tissues, which is plant's life line (Photo 3).

Symptoms of the GRENE Syndrome, in the sub-continent, first appeared with observance of mango malformation and site-specific/objective-oriented plant combinations. Ultimate objectives can only be met with after introduction of ENOs into xylem tissues, which exist in plants' pith. The ENOs could easily be guided/steered and speeded up by remote control methods. These took their start, most probably on 11-2-1889 in Ludhiana and Gurdaspur districts of India, where the former had a leading role. Effectiveness of ENOs in creating GRENE depends on growing selected plants on underground platforms comprising solid and broken brick material, stones, a variety of soils, burn-wood and mined coal, a variety of synthetic and cotton fiber and fabrics, worn out clothing and shreds, shoes and other goods of household usages, kitchen and dining waste, leather, glass and rubber materials, a variety of insulated and naked power conveyers and large number of other items, especially organic matter.

ENOs' mode of entry. The natural process of raw food intake from soil, by plant's xylem tissues, is regulated through osmotic process, which deals with soluble and non-living, organic and inorganic, compounds and disallows entry of all living beings into plant's system. Therefore, introduction of ENOs into plants is managed in an extra-natural way by an IGH using either of the two methods. First, after a plant grows to the desirable size and height, one of the main branches, very close to the stem, is horizontally sliced (*Shisham* and *Bair*, i.e. *Ziziphus jajuba* in Photo 3-1 and 3-2) or vertically scratched (*Shisham* in Photo 3-3) by IGH to expose xylem tissues for ENOs' entry into and exit from the system, whenever required. Second is to insert a nail through plant's main stem up to centre of the pith to allow a passage for ENOs and their contact between xylem tissues and outside environment. To avoid passage choking by growing sapwood and bark, a metallic, barbed, insulated or synthetic cord/rope is tied to nail's cap to keep the tunnel clear throughout plant's expected life span. Another mode of the second method is vegetative, which involves grafting another plant in the main stem or a major branch (*Gulhar* grafted in Eucalyptus with twisting stem and branches in Photo 3-4) for said outcome. In addition, routine pruning and cutting of branches for livestock grazing or for fuel wood and other uses leads to exposing xylem tissues to the environment and amenable to extra natural diseases, which in this study is called the GRENE Syndrome. Exposure of xylem or passage development, which is indispensable, is followed by ENOs' delivery for circulation into xylem life line.

The ENOs move back to reach main stem and then move forward both above and below the ground to reach apex of each root and branch. They causes death to xylem tissues at a branch-out point, stops the supply of raw food and keeps on moving up to the last xylem cell, which leads to dieing, decaying and ENOs spreading out through branches and other parts of the plant {*Bakain* (*Melia azedarach*) Photo 3-5}. Further, movement of infection may be restricted to a specific part or may travel throughout the affected plant create a variety of effects. It is, however, empirically established that infection moves forward either up or down, which is contrary to the *die back* hypothesis. It is noteworthy that the point from which ENOs enter a plant also serves as an exit point, which is black and shows signs of un-burnt coal.

In view of above, it may safely be concluded that the GRENE Syndrome is entirely different from the traditional pathogens identified by the biological scientists. It is also noteworthy that this non-traditional infection, existing in a plant, can only be transmitted to another one if the latter's xylem life line is exposed and no effect otherwise. Thus, the GRENE Syndrome, like AIDS (Acquired Immuno Deficiency Syndrome), is categorically non-contagious and the term epidemic used in some cases in the PFRI (2004). Seminar can only be admitted as a matter of general vocabulary and not at all in the scientific terminology. The traditional pathogenic infection reported by certain participating scientists does take place, but as a complementary instance or as the secondary issue.

Other features of the GRENE syndrome. ENOs start taxing plant's raw food, which is obtained by conversion of organic matter by microbial action in the presence of

Photo 3. Modes of ENOs Entry into the Plant

Photo 3-1	Photo 3-2	Photo 3-3	Photo 3-4
Photo 3-5	**Photo 3-6**	**Photo 3-7**	**Photo 3-8**

oxygen. Overall requirement for organic matter and its oxygenation is increased, which is scientific and accords with recommendations of the task force and that of the Australian biologists {Botany Department, Melbourne University, quoted by Jamil (2004)}. However, it is a temporary measure and works in the presence of FYM only.

The ENOs are comprised of a wide range of microscopic and non-traditional pathogens with varying capability to create a variety of bio-chemical and biological exudates in liquid and vapourized forms. Inside body of the plant, exudates have temperature and pressure which is more than that the outside environment. This causes stem's bulging out and canker formation, on southern (perhaps due to sun's moving on this side) aspect of the tree (Chaudhry & Ahmad, 2004). After lopping, bulging in of the stem and branches is also noted {*Jamun* (*Syzygium jambos*) Photo 3-6}, perhaps due to change in pressure and temperature within plant body. In addition, there are indications of acidic matters and electronic charge, probably negative, which can pass through insulation materials, such as wood, glass, synthetics, etc.

The author has made some observations about the ENOs' actions in root system of Mulberry (*Morus alba*), *Amaltas* (*Cassia fistula*) and Paper Mulberry or Jangli Toot, which were purposive and not designed systematically in a scientific way. In case of Mulberry, ENOs get developed into hard and aero-shaped structures either themselves or using plant tissues, which keep on penetrating through roots, leaving behind a tunnel, which gets filled up with soil and inner side of the root adjoining soil turns black, but root remains alive and functional. Scattered scratches outside these roots exhibit termite action, but none were found in a passage of about one foot width covering the roots. In case of *Amaltas*, roots were in an irregular zigzag shape (Photos 3-7 and 3-8) with hard structure moving ahead and leaving behind a dark brown xylem tissues, which appeared entirely burnt and black near the stem. The root system existed both above and below a five feet deep platform comprising bricks, brick pieces, mined and wood coal, stones, etc. which played their role in compressing and directing the growth of root system. Contrary to Mulbery's case, neither scratches were found on roots nor any living or dead insects were seen at all in a radius of around three feet around the stem. Surprisingly, root system of an adjoining Jangli Toot was found to be very hot, its bark was melted and giving a glutinous impression on touching it. However, xylem tissues of same roots somewhat farther away from *Amaltas* were dried and light brown, but severely affecting author's nervous system, especially brain and teeth, to give an impression of imbalanced condition, which finished after

putting them to fire. While burning all these, colour of fire flame was noted to be extra ordinarily darker than the routine one. The same effects were noted during destruction and burning of a severely affected stem of a *Bakaine* plant. In case of guava and *Jamun*, a maroon coloured ENO is visible in the pith, which keeps on growing parallel to branches and seemed to be tailoring them out in atypical way. It is flexible, but gives a disgusting feel from both look and touch.

The ENOs actions are also assisted/guided by a large number of ornamental, commercial and other plants. In addition, a wide range of animals are involved, which are noctural, cave-living and give disgusting appearance. These include ants, termites, honey bees, centipedes, moles, multi-coloured snakes, cats, dogs, bats, a variety of birds and many others who are perhaps yet to be identified. Insects are morphologically different from those generally found on earth. They are more poisonous than the ordinary ones and keep on releasing such substances, which are very itchy and injurious to health. The tiny ants have special effects, such as creating a hot feeling, skin irritation and leaving long-lasting impressions on the affected part. Role of cat is very important by virtue of inherent magnetism in its skin and hair. Thus, it is a widely used as a mobile grid to receive gaseous/acidic exudates, carrying electronic charge, from the GRENE Plants and transmit them to the object for a variety of effects, such as general numbness, cold, bitter throat, twisting hands and legs, tension, severe panic feelings, etc. In this process, IGHs, their blood relatives and associates also receive effects which are irreversible and having no cure at all. It is noteworthy that such effects enter the human body through hair on head having magnetic properties to be caught by the gaseous and electronic exudates. Another ill-effect is placement of ENOs by IMFs in rectal passage of IGH causing him to become a life-long catamite.

RECOMMENDATIONS

It is established that the main cause of the GRENE Syndrome are ENOs, which are a non-traditional form of infection affecting exposed xylem tissues for which no treatment is discovered as yet. Other salient examples are mango malformation, AIDS, cancer, etc., which are awaiting candidates for discovery of diagnosis and treatment. However, the salient protective measures are briefed below:

i) The only remedy available for the GRENE Syndrome is to eradicate and burn the ENOs affected flora. To avoid further damages, slicing, slashing, pruning, lopping, etc. have to be stopped as a preventive measure. In addition, areas meant for livestock grazing need to be earmarked clearly and the rest has to be declared as protected plantations/no-grazing areas.

ii) In case of Shisham, nursery may be raised by growing seed in small polythene bags, which may ensure safety for root system and to avoid injuries to rest of the plant body as well. This method may be applied to all plants requiring intensive care at the initial or nursery stage.

iii) Discoveries made in this study pose a challenge for the biological scientists to analyze the ENO affected plants from the point views of anatomy, physiology, bio-chemistry and many other issues mentioned in this study. Especially, involvement of experts on physical, chemical, electronic and others subjects may be helpful to understand the GRENE Syndrome, which requires a multi-disciplinary approach for its analysis, diagnosis and to discover the remedial measures. This type of study may also help to understand mango malformation, cancer, AIDS, etc. pending their solution.

The said preventive measure may be applied to a very limited extent for the plants grown from seed, but of a little use for a variety of fruit, floral and other plants obtained through grafting and vegetative methods. Hence, recommendation (iii) merits the first priority.

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