ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 9, Issue, 5(E), pp. 26825-26827, May, 2018

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

IMPACT OF BIOTECHNOLOGY IN OUR ENVIRONMENT

Jayalakshmi C and Thangaraj N

Govt. Ats College for Women Salem-8. & Kandaswami Kander's College Namakkal

DOI: http://dx.doi.org/10.24327/ijrsr.2018.0905.2131

ARTICLE INFO

Article History:

Received 6th February, 2018
Received in revised form 20th March, 2018
Accepted 8th April, 2018
Published online 28th May, 2018

Key Words:

Green environment, optimal use of nature, feed stock, biological systems.

ABSTRACT

Biotechnology has come to play an increasing important role in many aspects of everyday life. The environment has to sustain not to only the basic human needs for survival, but also, the conversion of raw materials into products and services. Therefore, there is an urgent to exploit the biotechnological innovations for food, feed, energy products and clean and green environment. The utilizations of environmental biotechnology have significantly affected the world and will be one of the most valuable tools for improving the quality of life for future generations. Although many benefits are provided by these manipulations, there can also be unexpected, negative health and environmental out comes. Environmental biotechnology can simply be described the " optimal use of nature, in the form of plants and animals, bacteria, fungi and algae, to produce renewable energy, food and nutrients in a synergistic integrated cycle of profit making process were the waste of each process becomes the feed stock for another process". The international society for environmental biotechnology as "the development, use and regulation of biological systems like land, air, water and environment-friendly processes".

INTRODUCTION

Life sciences and biotechnology are widely regarded as being among the most promising frontier technologies for the coming decades. In the health care sector, biotechnology already permits safer and more ethical production of an increasing number of drugs and medical services. Stem cell research offers the prospect of replacement tissues and organs to treat degenerative diseases, Alzheimer's disease and Parkinson's disease, etc.

In the agri-food sector, biotechnology has the potential to improve the quality of foodstuffs and animal feed to help prevent disease and reduce health risks. Plant genome research is a key area. In this context, the size of the world's area under genetically modified crops (GMOs) has nearly doubled (G.Beard, 1980).

In the case of non-food uses for crops, biotechnology helps to improve the use of industrial raw materials for the energy transformation industry and the pharmaceutical industry. The modifications under development include alterations to carbohydrates, oils, fats, proteins and fibres. Similarly, biomass could provide alternative sources of energy, with both liquid and solid biofuels such as biodiesel and bioethanol. From an environmental point of view, biotechnology offers new ways to protect and improve the environment, especially air, soil, water and waste. In the context of the revised Lisbon strategy, the life sciences and biotechnology sector have a role to play. The latest progress report points out to, over the coming decades it should:

- strengthen Europe's position on the world high-technology market;
- become a leading area of science, industry and employment;
- increase prosperity by creating higher-quality jobs;

Enviroinmental Biotechnology is unique in drawing together a wide readership of scientists and engineers from the many disciplines of the applied biosciences. As in the successful biotechnology companies and leading academic research groups, Enviroinmental Biotechnology reflects the view that biotechnology is the integrated use of many biological technologies from molecular genetics to biochemical engineering.

We hope our content will be of particular interest to industrial or academic scientists active in R&D in molecular biotechnology, gene transfer and expression, applied microbiology, environmental biotechnology, biofuels and bioenergy, nanotechnology, misprocessing, chemical

Corresponding author:* **Jayalakshmi C
Govt. Ats College for Women Salem-8. & Kandaswami Kander's College Namakkal

biotechnology, tissue engineering and regenerative medicine, nucleic acid therapeutics and vaccines, plant biotechnology and patenting and regulatory issues. (S.wessely, 1997).

Such technologies have helped propel forward the already impressive strides made in our understanding of the genetic, molecular, and physiological mechanisms that contribute to brain development and function. Developing new technologies to probe the brain, as well as approaches for managing complex emerging data, will require concerted efforts and collaboration across specialties.

MATERIALS AND METHODS

Biofilms matrix enclosed microbial accretions that adhere to biological or non-biological surfaces represent a significant and incompletely understood mode of growth for bacteria. Biofilm formation appears early in the fossil record (≈ 3.25 billion years ago) and is common throughout a diverse range of organisms in both the Archaea and Bacteria lineages, including the 'living fossils' in the most deeply dividing branches of the phylogenetic tree. It is evident that biofilm formation is an ancient and integral component of the prokaryotic life cycle, and is a key factor for survival in diverse environments. Recent advances show that biofilms are structurally complex, dynamic systems with attributes of both primordial multicellular organisms and multifaceted ecosystems. Biofilm formation represents a protected mode of growth that allows cells to survive in hostile environments and also disperse to colonize new niches. The implications of these survival and propagative mechanisms in the context of both the natural environment and infectious diseases are discussed in this review.

Plastics and pesticides are examples of products that contain oestrogenic endocrine-disrupting chemicals, or EEDCs, which can interfere with mammalian development by mimicking the action of the sex hormone oestradiol. For instance, the exposure of developing rodents to high doses of EEDCs advances puberty and alters their reproductive function. Low environmental doses of EEDCs may also affect development in humans.(A.J.Barsky,1988). Effects have become apparent in humans over the past half century that are consistent with those seen in animals after exposure to high doses of EEDCs, such as an increase in genital abnormality in boys and earlier sexual maturation in girls. Here we show that exposing female mouse fetuses to an EEDC at a dose that is within the range typical of the environmental exposure of humans alters the postnatal growth rate and brings on recent years, there has been increasing interest in how changes in agricultural practice associated with the introduction of particular genetically modified (GM) crops might indirectly impact the environment. There is also interest in any effects that might be associated with recombinant and novel combinations of DNA passing into the environment, and the possibility that they may be taken up by microorganisms or other live biological material. From the current state of knowledge, the impact of free DNA of transgenic origin is likely to be negligible compared with the large amount of total free DNA (A.Dembe, 1996).The kinds of potential impacts of GM crops fall into classes familiar from the cultivation of non-GM crops (e.g., invasiveness, weediness, toxicity, or biodiversity). It is likely, however, that the novelty of some of the products of GM crop improvement will present new challenges and perhaps opportunities to manage particular crops in creative.

Recent awareness that most microorganisms in the environment are resistant to cultivation has prompted scientists to directly clone useful genes from environmental metagenomes. Two screening methods are currently available for the metagenome approach, namely, nucleotide sequence-based screening and enzyme activity-based screening. Here we have introduced and optimized a third option for the isolation of novel catabolic operons, that is, substrate-induced gene expression screening (SIGEX). This method is based on the knowledge that catabolic-gene expression is generally induced by relevant substrates and, in many cases, controlled by regulatory elements situated proximate to catabolic genes. For SIGEX to be high throughput, we constructed an operon-trap gfp-expression vector available for shotgun cloning that allows for the selection of positive clones in liquid cultures by fluorescence-activated cell sorting.

RESULT

Over recent years there has been a steady and important change in the public's perception of the relation between aspects of modern life and health. Now, at the beginning of the 21st century, people's suspicion of modernity has increased to such an extent that it has undermined their view of their own health, increased their worries about environmental causes of poor health, and fostered a migration to complementary medicine. Concerns about the safety of mobile phones, environmental pollution, vaccines, bovine spongiform encephalopathy, genetically modified food, and food in general have led to a heightened awareness of the effect of environmental changes on health. We believe that these concerns about technological change, which have been largely unrecognized by researchers, have important implications for the way patients interact with health services.

This change in public concerns has obvious and more subtle effects. Despite considerable recent research and official inquiries into new technologies such as mobile phones and genetically modified food, public suspicion remains high. In clinical settings patients are reluctant to start medication or to continue it for an extended period for fear of putting “unnatural chemicals” into their body. At the same time the consumption of unproved herbal and alternative “natural” remedies is increasing. This anxiety is reflected in the pattern of presentations of psychosomatic illness: the number of illnesses attributed to environmental factors for example, sick building syndrome, multiple chemical sensitivity, total allergy syndrome, and twenty century disease has increased.

The milieu that has fostered this unease with modernity is an increase in the public's fascination with personal health and medicine, as evidenced by the burgeoning of gyms and fitness programmes, and the widespread adoption of a “healthy lifestyle.” The media's increased coverage of health topics, in stories on the dangers lurking in ordinary activities such as air travel and vaccination, has raised worries about routine health care and increased people's perception of their vulnerability to new and exotic illnesses. Media stories also tend to misrepresent the dangers of new environmental influences and aspects of modernity, while playing down more mundane causes of ill health, such as the link between tobacco and heart

disease. This focus of the media on risks with a novelty value fosters the belief that they are far more common than they actually are.

A recent US study of hospital outpatients found that 25% of the patients had used the web for medical information in the past year and that 60% planned to do so in the next year. Medical scares recently transmitted on the web and through email lists include antiperspirants that cause breast cancer, and the spread of necrotizing fasciitis by bananas. We believe it is only a matter of time before a mass psychogenic illness is identified as being spread electronically. It is difficult to feel optimistic. Despite all the evidence of the extraordinary improvements in public health during the past century, surveys show that we experience more symptoms and feel worse than our ancestors. The rapid introduction of new technologies, while improving the quality of life of millions of people, has been accompanied by important adverse effects in the way people make sense of illness and present with health complaints.

CONCLUSION

The result of this deluge of information on the supposedly pervasive risks to personal health is that people now feel much more vulnerable. Normal everyday symptoms such as headache and fatigue are now more easily interpreted as signs of disease or ill health. Attributions made by patients about the cause of their illness often involve environmental pollution, and they see the effects of modern life as undermining the effectiveness of their immune system. Not surprisingly, recent research has shown that patients who are the most concerned about the effects of modern life on health are also more likely to complain of symptoms in the previous month, have more functional illness, and be consumers of complementary health care than patients with fewer concerns about modernity. Historically, the introduction of new technologies has frequently been accompanied by new complaints, fears, and illnesses, such as railway spine and electric allergy.

George Beard, the founder of the diagnosis of neurasthenia, ascribed the cause of this disorder to "wireless telegraphy, science, steam power, newspapers and the education of women; in other words modern civilization." Currently the adoption of new technologies is accelerating and is occurring in a climate of suspicion and mistrust in medical evidence or reassurances. Distrust of experts is now commonplace, and at its extreme it can merge into the conspiratorial thinking that is part of a modern paranoid style. Well publicized crises, most obviously bovine spongiform encephalopathy and foot and mouth disease, have severely dented confidence, although the trend was clear long before. Mismanaged environmental incidents and easily recalled examples of the fallibility of experts, such as in the cases of new variant Creutzfeldt-Jakob disease and thalidomide, add to the fears of the public and undermine its trust in the people and authorities responsible for managing risk. Sadly, trust once lost is difficult to restore.

References

1. Eisenberg DM, Davis RB, Ettner SL, Appel S, Wilkey S, Van Rompay M, et al. Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey. JAMA.1998; 280:1569-1575.
2. Wessely S. Chronic fatigue syndrome: a 20th century illness? *Scand J Work Environ Health.* 1997:17-34.
3. Barsky AJ. The paradox of health. *N Engl J Med*. 1988; 318:414-418.
4. Frost K, Frank E, Maibach E. Relative risk in the news media; a quantification of misrepresentation. *Am J Public Health*.1997; 87:842-845.
5. Dembe A. Occupation and disease: how social factors affect the conception of work-related disorders. New Haven: Yale University Press; 1996.
6. Beard G. A practical treatise on nervous exhaustion (neurasthenia): its symptoms, nature, sequences, treatment. New York: William Wood; 1880.
7. Showalter E. Histories: hysterical epidemics and modern culture. London: Picador; 1997.

How to cite this article:

Jayalakshmi C and Thangaraj N.2018, Impact of Biotechnology In Our Environment. *Int J Recent Sci Res.* 9(5), pp. 26825-26827. DOI: http://dx.doi.org/10.24327/ijrsr.2018.0905.2131

****