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Studies on Rubber (*Hevea brasiliensis*) Trees Exist Plant Type after Planting and Available Tapping Tree of Rubber Plantation in China

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ABSTRACT

Existing plant types of rubber tree after planting and available tapping tree were investigated, and there were about 28 rubber plantations with different tapping years of 8 varieties "CATAS7-33-97", "CATAS8-79", "CATAS7-20-59", "PR107", "RRIM600", "GT1", "INA873", "93-114" in South China. The results showed that there were six kinds of existing plant types of rubber tree after planting of rubber plantations, which were available tapping trees, wind damaged trees, cold damaged trees, tapping panel dryness trees, absent trees and weak trees, respectively. These data investigated also showed rubber trees under available tapping, stoppage due to tapping panel dryness, absence, wind damage, cold damage and weakness were counted and calculated and made up for 72.21%, 14.75%, 5.61%, 3.86%, 2.68% and 1.89%. Tapping panel dryness trees, wind damage and absent trees are major factors for the loss of tapping rubber trees in the rubber plantations. Of these investigated varieties, available tapping trees per 100 trees of rubber plantation of "PR107" at the 1st, 12th, 14th, 16th, 20th, 24th tapping year were 96, 67, 70, 75, 66, 46 trees in Hainan planting zone, respectively. Available tapping trees per 100 trees of rubber plantation of "RRIM600" at the 9th, 15th, 20th, 22nd tapping year were 88, 62, 55, 36 trees in Yunnan planting zone, respectively. Available tapping trees per 100 trees of rubber plantation of "93-114" at the 10th, 19th, tapping year were 94, 62 trees in Guangdong planting zone. These results showed that available tapping trees of rubber plantation decreased with increasing tapping age under different planting zones in China.

KEYWORDS

Rubber Tree (*Hevea brasiliensis*), Exist Plant Type, Available Tapping Tree, Rubber Plantations, Different Tapping Years, China

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0 Comments

Performance Analysis of Techniques Used for Determining Land Mines

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ABSTRACT

Today, remote sensing is used for different methods and different purposes. In all of the detection methods, some considerations such as low energy consumption, low cost, insensitivity to environmental changes, high accuracy, high reliability and robustness become important. Taking into account these facts, remote sensing methods are used in applications such

as geological and archeological research, engineering areas, health services, preserving and controlling natural life, determination of underground sources, controlling air, sea and road traffic, military applications, etc. The method to be used is based on the object type to be detected, material to be made, and location to be found. The remote sensing methods from the past up to today can be listed as acoustic and seismic, ground penetration radar (GPR) detection, electromagnetic induction, infrared (IR) imaging, neutron quadrupole resonance (NQR), thermal neutron activation (TNA), neutron back scattering, X-ray back scattering, and magnetic anomaly detection. In these methods, detected raw images have to be processed, filtered and enhanced. In order to achieve these operations, some algorithms are needed to be developed. In this study, the methods used in detecting land mines remotely and their performance analysis have been given. In this way, the last situation on the advantages and disadvantages of methods used, application areas and detection accuracies are determined. Furthermore, the algorithms such as transmission line matrix (TLM), finite difference time-domain (FDTD), the method of moment (MoM), split step parabolic equation (SSPE) and image processing and intelligent algorithms are presented in detail.

KEYWORDS

[Remote Sensing](#), [Land Mine](#), [Detection Performance](#), [Algorithm](#)

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Effect of 1-MCP on Cotton Plants under Abiotic Stress Caused by Ethephon

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ABSTRACT

Many environmental stress factors have been identified to increase square and boll abscission and thus result in reduced cotton yield. Under stress conditions, ethylene is elicited. Ethylene peaks before

abscission to promote the formation of the abscission layer and plays a major role in early season square and boll abortion in cotton (*Gossypium hirsutum* L.). In addition, ethylene stimulates the leaf senescence process. Thus, it is desirable to protect plants from ethylene-induced fruit loss and premature leaf senescence under stress conditions. The objective of this study was to evaluate the ability of 1-methylcyclopropene (1-MCP) to protect cotton plants against abiotic stress caused by ethephon (ethylene promoting effect). Field studies using a randomized complete block design with four replications were conducted in 2010 and 2011 at Texas A&M AgriLIFE Research Farm in Burleson County, TX. Eight treatments that consisted of two 1-MCP rates (0 and 10 g a.i. ha⁻¹) in combination with four ethephon rates (0, 146, 292, 438 mL·ha⁻¹) were imposed at the first flower (FF) stage of the development. 1-MCP increased plant height and number of main stem nodes in both years. In addition, 1-MCP-treated plants exhibited greater membrane integrity and increased photosystem II quantum efficiency and thus delayed senescence in both years. These potentials for yield increase were realized in 2011 with 1-MCP treatment exhibiting a higher lint yield. In 2012, although 1-MCP treatment increased number of open fruit and open fruit weight per plant significantly, no significant lint yield increase was detected.

KEYWORDS

1-MCP, Ethephon, Yield Components, Yield Distribution, Leaf Senescence

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Missed Opportunities for Prevention of Mother-to-Child Transmission of HIV (PMTCT) in Ibadan, Southwest Nigeria

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ABSTRACT

Background: Nigeria has the largest paediatric HIV-infected population in the world. Missed opportunities for prevention of mother-to-child transmission of HIV (PMTCT) compromise efforts at eliminating new paediatric HIV infections. Methods: Six hundred children, aged < 15 years, presenting to the paediatric units of the University College Hospital (UCH), Ibadan Southwest Nigeria between June to December 2007 were studied. The demographics, HIV status and socioeconomic status of mothers and their children were studied. A 4-step hierarchy was used to assess the missed opportunities for PMTCT. Step 1: utilization of a health facility for antenatal care and delivery; Step 2: maternal HIV status determination during pregnancy; Step 3: provision of antiretroviral medication to HIV-infected mother and baby; and Step 4: avoidance of mixed feeding in HIV-exposed children. The rates of missed opportunities for PMTCT services at different steps in the PMTCT cascade, perinatal transmission rates, and associated factors were reported. Results: There were 599 mothers and 600 children (one set of twins), 60 (10%) were HIV infected and 56 (93.3%) of these were adjudged perinatally infected. Of 78 HIV-infected women, 7 (9.0%) accessed all interventions in the PMTCT cascade and 71 (91.0%) had missed opportunities for PMTCT. Missed opportunities for PMTCT occurred 42.9% in cascade Step 1, 64.2% in Step 2, 52.6% in step 3 and 73.7% in Step 4. All mother-baby pairs who accessed complete PMTCT interventions received care at a teaching hospital. Among infants with perinatal HIV infection, 53 (94.6%) were born to mothers who had missed opportunities for PMTCT. Most women with missed opportunities attended antenatal care outside the teaching hospital setting and belonged to low socioeconomic status. Conclusion: It is imperative to expand PMTCT access

to women who receive antenatal care outside the teaching hospitals and to those of low socioeconomic status.

KEYWORDS

HIV, Perinatal, Prevention, PMTCT, Missed Opportunities

Cite this paper

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Association between rs1800795 (-174 G/C) Polymorphism in the Promoter of IL6 Gene and Risk of Relapsing-Remitting Multiple Sclerosis (RRMS) in Isfahan Population

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ABSTRACT

Multiple sclerosis (MS) is an inflammatory demyelinating disease of central nervous system (CNS) that mostly affects young adults. The etiology of MS includes both genetic and environmental factors. A single nucleotide polymorphism (SNP) linked with autoimmune disorders predisposition, identified by Genome-Wide Association Study (GWAS) among genes which immunologically related are considerably over signified. The goal of the current study is investigation of the association between rs1800795 (-174 G/C) polymorphism in the promoter of *IL6* gene variant with the risk of RRMS in a subset of Iranian population. In this case-control study, 110 healthy subjects and 110 patients with RRMS were included. DNA was extracted from blood samples and polymerase chain reaction (PCR) was used to amplify the fragment of interest contain rs1800795 SNP, restriction fragment length polymorphism (RFLP) method was performed for genotyping of the DNA samples with a specific restriction enzyme (*NlaIII*). SPSS for Windows software (version 18.0; SPSS, Chicago, IL) was used for statistical analysis. No significant differences were found between RRMS patients and healthy controls with respect to the distribution of the cytokine gene polymorphism investigated. Odds ratio adjusted for age, sex, and

blood groups (except A blood group) has displayed similar outcomes. These results indicate that the rs1800795 SNP is not a susceptibility gene variant for development of RRMS in the Isfahan population. Further studies using new data on complex transcriptional interactions between IL-6 polymorphic sites are necessary to determine IL-6 haplotype influence on susceptibility to RRMS.

KEYWORDS

Multiple Sclerosis (RRMS), GWAS, *IL6* Gene, Polymorphism

Cite this paper

Pourhossein, M. , Ghavimi, R. , Alsahebfosoul, F. and Ghaedi, K. (2014) Association between rs1800795 (-174 G/C) Polymorphism in the Promoter of *IL6* Gene and Risk of Relapsing-Remitting Multiple Sclerosis (RRMS) in Isfahan Population. *Open Journal of Genetics*, 4, 407-413. doi: [10.4236/ojgen.2014.45038](https://doi.org/10.4236/ojgen.2014.45038).

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Removal of Safranin-O from Aqueous Solution by Adsorption onto Kaolinite Clay

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ABSTRACT

In this study, Natural Raw Kaolinite (NRK) clay was used as an adsorbent for the investigation of the adsorption kinetics, isotherms and thermodynamic parameters of a cationic dye Safranin-O, also known as Basic Red 2 (BR2) from aqueous solution. The effects of pH, temperature, initial dye concentration and contact time on the adsorption capacity were evaluated and the adsorbent was characterized by XRD, BET and FTIR. The pseudo-first-order, pseudo-second-order kinetic models and the intraparticle diffusion model were used to describe the kinetic data and the rate constants were evaluated. The experimental data fitted very well with the pseudo-second-order kinetic model and also followed intraparticle diffusion model revealing that diffusion is not only the rate-controlling step. The Langmuir Freundlich and Dubinin-Radushkevich adsorption models were applied to describe the equilibrium isotherms and the isotherm constants were also determined. The Langmuir model agrees with experimental data well. The activation energy, change of Gibbs free energy, enthalpy and entropy of adsorption were also evaluated for the adsorption of BR2 onto NRK.

KEYWORDS

Basic Red 2, Kaolinite, Adsorption, Kinetic, Thermodynamic, Surface Area

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Adebowale, K. , Olu-Owolabi, B. and Chigbundu, E. (2014) Removal of Safranin-O from Aqueous Solution by Adsorption onto Kaolinite Clay. *Journal of Encapsulation and Adsorption Sciences*, 4, 89-104. doi:

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The Fate of Ochoa's School in the Origins of Oncogenetics in US (I)

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ABSTRACT

It was in the early eighties that a genuine school of Spanish biochemists around Severo Ochoa participated in the oncogene races. Malignant cell transformation and oncogenes were put in relation during that era. Several prominent scientists coming from Spain have established and maintained a strong tradition of studies in the enzymology of retroviruses and transcriptional events. In this short historical account, we briefly pay tribute to these famous forerunners, by emphasizing both the originality and quality of their work, as well as the many accompanying conceptual and methodological analysis. We start with Àngel Pellicer (1948-) who, amongst other contributions, first established the landmark experimental transfection protocol and nucleated the onset of oncogenetics with his discovery that ras oncogenes were activated by mitogenic factors. Whereas Manuel Perucho (1948-) can be considered as one of the pioneers, if not the founder, of the cloning of human oncogene, through his experiments on H-ras, and he became a milestone in diagnostic detection to allow hospital technicians to screen for mutant ras genes. More known Mariano Barbacid (1949-)

established that ras oncogene was a kind of common denominator for cancer, and clarified that their functional differences were by a single point mutation. In conclusion, this history demonstrates how eager spanish biochemists trained by Eladio Viñuela were to maintain the tradition of Severo Ochoa's long-standing scientific reputation in the US.

KEYWORDS

Neoplasm, Molecular Cloning, Gamma-Rays, Point Mutation, Oncogenes, 3T3 Cells

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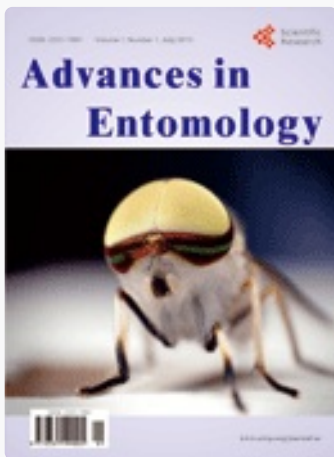


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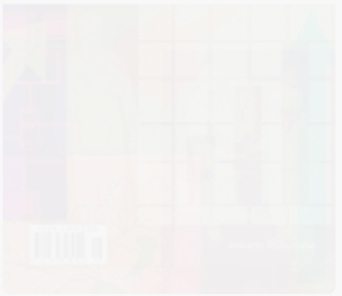
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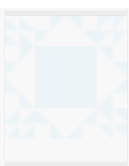
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