3.3.2 Number of research papers per teacher in the Journals notified on UGC website during the last five years.
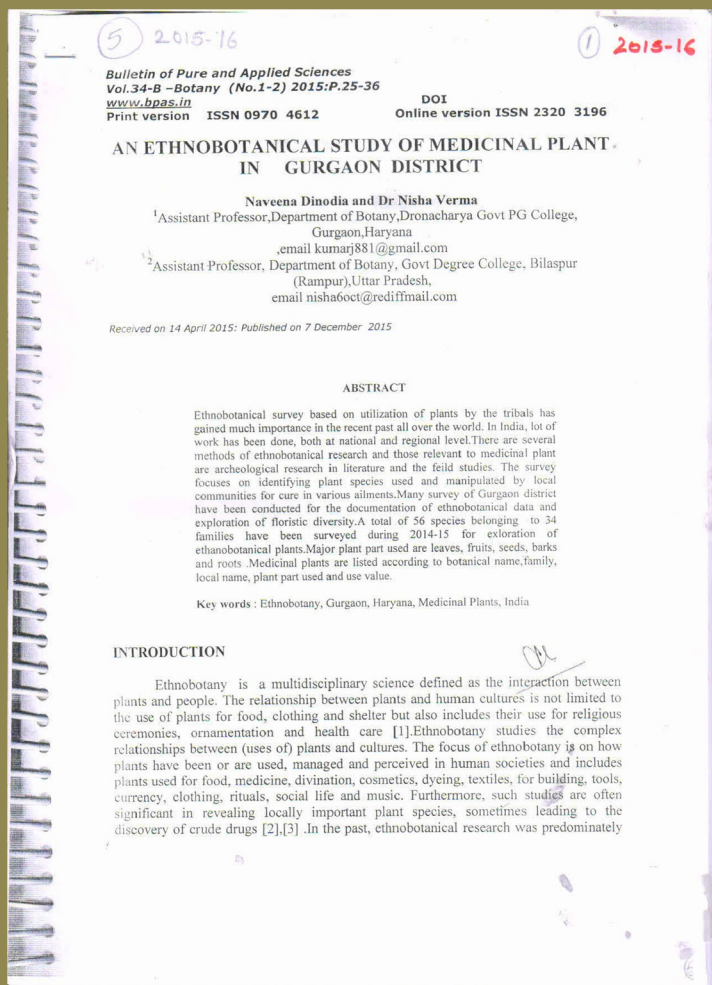
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JOURNALS

2015-16

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Left paper:

AN ETHNOBOTANICAL STUDY OF MEDICINAL PLANT IN   GURGAON DISTRICT

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ABSTRACT

Ethnobotanical survey based on utilization of plants by the tribals has gained much importance in the recent past all over the world. In India, lot of work has been done, both at national and regional level.There are several methods of ethnobotanical research and those relevant to medicinal plant are archeological research in literature and the feild studies. The survey focuses on identifying plant species used and manipulated by local communities for cure in various ailments.Many survey of Gurgaon district have been conducted for the documentation of ethnobotanical data and exploration of floristic diversity.A total of 56 species belonging to 34 families have been surveyed during 2014-15 for exploration of ethnobotanical plants.Major plant part used are leaves, fruits, seeds, barks and roots .Medicinal plants are listed according to botanical name,family, local name, plant part used and use value.

Key words : Ethnobotany, Gurgaon, Haryana, Medicinal Plants, India

INTRODUCTION

Ethnobotany is a multidisciplinary science defined as the interaction between plants and people. The relationship between plants and human cultures is not limited to the use of plants for food, clothing and shelter but also includes their use for religious ceremonies, ornamentation and health care [1].Ethnobotany studies the complex relationships between (uses of) plants and cultures. The focus of ethnobotany is on how plants have been or are used, managed and perceived in human societies and includes plants used for food, medicine, divination, cosmetics, dyeing, textiles, for building, tools, currency, clothing, rituals, social life and music. Furthermore, such studies are often significant in revealing locally important plant species, sometimes leading to the discovery of crude drugs [2],[3] .In the past, ethnobotanical research was predominately

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Right paper:

A note on the haematophagous nature of poultry shaft louse, *Menopon gallinae* (Amblycera: Phthiraptera)

Surendra Kumar[1] · Aftab Ahmad[1] · Rehmat Ali[1] · Vijay Kumar[1]

Abstract   An analysis of the crop contents of the poultry shaft louse, *Menopon gallina* indicates that 67 % of adult males and 72 % of the adult females examined carried red content compatible to host blood, along with feather barbules. The percentage of nymphal instars carrying red content in the crop was quite low. On the basis of crop contents the louse does not seem to harbor any triturating agent and is also not involved in cannibalism or predation. SEM studies on the ventral side of head do not indicate the presence of any pointed structure which can be used to pierce the skin.

Keywords   *Menopon gallinae* · Poultry shaft louse · Haematophagous louse · Amblycera · Phthiraptera

Introduction

Avian Phthiraptera exhibit considerable diversity with respect to feeding habits. Some species are purely feather feeders; others consume the host blood occasionally while still others are habitually haematophagous. The degree of harmfulness of avian lice is generally determined by their feeding habits and also the population density. Haematophagous species do not only affect the vitality and productivity of their hosts and often act as reservoir and transmitter of the strains of infectious diseases among the hosts. Members of Menoponidae consume the host blood in varying degree (Wilson 1933; Crutchfield and Hixson 1943). Kalamarz (1963) confirmed the blood feeding habits of two species by detecting hemoglobin with crystals Teichman method and by contact autoradiography, using Fe[59] isotope. Haematophagous nature of selected species e.g. *Menacanthus eurysternus*, infesting common Myna *Acridotheres tristis* (Agarwal et al. 1983), *Trinoton anserinum* occurring on swans (Seegar et al. 1976) *Trinoton querquedule* parasitizing *Anas c. crecca* (Saxena et al. 1985), *Heterodoxus spiniger* infesting dogs (Agarwal et al. 1982) has been reported by the workers. On the other hand, members of Gyropidae reportedly eat upon liquid secretions of eye (Rothschild and Clay 1952). The *Piagetiella* sp. lives in pauches of Pelecaniformes and visits feathers only to lay eggs, presumably feeding on blood, mucus and skin debris (Dubinin 1947). *Gyropus ovalis* and *Gliricola* sp. Reportedly rely upon serum and secretions of their hosts (Marshall 1981).

The present report furnishes information on the degree of haematophagy of a poultry shaft louse, *Menopon gallinae* with respect to sex, stage and mouth parts.

Materials and methods

Freshly collected live adults and different instars of nymphs of *M. gallinae* were collected from career hens and dissected in Insect Ringers Solution under Stereozoom Trinocular Microscope. The crop of the specimens was taken out and teased on glass slide to analyze the gut contents. For SEM studies, lice were fixed in 2.5 % gluteraldehyde, post fixed in 0.2 M phosphate butter, critically dried, arranged on aluminum stubs covered with double sided cello tape, gold coated and examined under Scanning Electron Microscope.

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Springer

2015-16
(3)

Seasonal variations in the prevalence and intensities of infestation of phthirapteran ectoparasites of domestic fowl

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ABSTRACT: In the present paper an attempt has been made to observe the impact of four ecofactors (RH, Temperature, Heat index and Photoperiod) on the prevalence and infestation intensity of five phthirapteran species infesting domestic fowl (Lipeurus caponis, Lipeurus tropicalis, Menopon gallinae, Goniocotis gallinae, Goniodes dissimilis). By and large the ecofactor taken into consideration did not have significant impact on the prevalence. However the RH and photoperiod appeared to have influence on intensities of L. caponis and L. tropicalis which prefer wing feathers. On the other hand temperature and heat index seem to have influence on intensities of G. gallinae, G. dissimilis, and M. gallinae which generally prefer body feathers of host bird.
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Key words: Phthiraptera, Ischnoceran, Amblyceran, Infestation intensity, Prevalence.

INTRODUCTION

In spite of the fact that phthirapteran ectoparasites live in a microclimate of considerable constancy (made up of feathers / hair), they are not able to escape from the climax of seasonal changes, selected workers have noted the seasonal variations in the populations of phthirapters infesting few host birds Foster (1969), Agarwal and Saxena (1979), Chandra et al., 1990, Clark et al., 1994, Srivastava et al., 2003). Workers like Marshall (1981) and Price and Graham (1997) have made attempts to review the work done on this aspect. In the present study an attempt has been made in the different months of the year to record the variations in

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2015-16
(50) (4)

Almost $g\zeta^*$ - Normal Spaces and $gg\zeta^*$-Closed Sets

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Abstract: In this paper, we introduce the notion of $gg\zeta^*$-closed and $rgg\zeta^*$-closed sets in topological spaces and investigate some of their properties. Further, utilizing $gg\zeta^*$-closed and $rgg\zeta^*$-closed sets, we obtain characterizations and preservation theorems for $g\zeta^*$-normal, almost $g\zeta^*$-normal and mildly $g\zeta^*$-normal spaces.

2010 AMS Subject classification: 54D15, 54A05, 54C08.

Keywords: $gg\zeta^*$-closed and $rgg\zeta^*$-closed sets; $g\zeta^*$-normal, almost $g\zeta^*$-normal and mildly $g\zeta^*$-normal spaces.

1. Introduction

In 1965, Njastad [7] introduced the concept of α-open sets in topological spaces. In 1970, Levine [5] initiated the study of so called generalized closed (briefly g-closed) sets in order to extend many of the most important properties of closed sets to a large family. In 1970, Singal and Arya [9] introduced the concept of almost normal spaces. Various properties of new classes of topological spaces have been studied and the relations of these new concepts with the concepts of almost regularity have also been investigated. In 1973, Singal and Singal [10] introduced the notion of mildly normal spaces in topological spaces. In 1985, Jankovic [3] introduced the concept of rc-continuous functions. In 2004, Nono et al. [8] introduced the notion of $g^*α$-closed sets in topological spaces. In 2009, Devi et al. [2] introduced the concept of ^{g}co-closed sets. In 2012, Kokilavani [4] introduced the notion of $g\zeta^*$-closed sets in topological spaces and investigated some of their properties. In 2013, Balasubramanian [1] defined rg-normality, almost rg-normality and mildly rg-normality, continue the study of further properties of rg-normality and show that these three axioms are regular open hereditary.

2. Preliminaries

Throughout this paper, spaces (X, τ), (Y, σ), and (Z, γ) always mean topological spaces on which no separation axioms are assumed unless explicitly stated. Let A be a subset of a space X. The closure of A and interior of A are denoted by cl(A) and int(A) respectively. A is said to be α-open [7] if A ⊂ int(cl(int(A))). The complement of a α-open set is said to be α-closed [1]. The intersection of all α-closed sets containing A is called α-closure [2] of A, and is denoted by α-cl(A)). The α-interior [2] of A, denoted by α-int(A), is defined as union of all α-open sets contained in A.

2.1 Definition. A subset A of a space (X, τ) is said to be
(1) generalized closed (briefly g-closed) [5] if cl(A) ⊂ U whenever A ⊂ U and U ∈ τ.
(2) rg-closed if cl(A) ⊂ U whenever A ⊂ U and U is regular open in X.
(3) α-generalized closed (briefly αg-closed) [6] if α-cl(A) ⊂ U whenever A ⊂ U and U ∈ τ.

(4) generalized ^{g}α-closed (briefly $g^gα$-closed) [8] if αc-I(A) ⊂ U whenever A ⊂ U and U is g-open in X.
(5) ^{g}generalized α-closed (briefly ^ggα-closed) [2] if α-cl(A) ⊂ U whenever A ⊂ U and U is $g^gα$-open in X.
(6) r$α$g-closed [3] if α-cl(A) ⊂ U whenever A ⊂ U and U is regular open in X.
(7) $g\zeta^*$-closed[4] if α-cl(A) ⊂ U whenever A ⊂ U and U is ^{g}co-open in X.
(8) g-open (resp. rg-open, αg-open, rαg-open, $g\zeta^*$-open) if the complement of A is g-closed (resp. rg-closed, αg-closed, rαg-closed, $g\zeta^*$-closed).
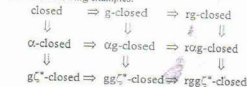
The intersection of all $g\zeta^*$-closed sets containing A is called $g\zeta^*$-closure of A, and is denoted by $g\zeta^*$-cl(A). The $g\zeta^*$-interior of A, denoted by $g\zeta^*$-int(A), is defined as union of all $g\zeta^*$-open sets contained in A. The family of all $g\zeta^*$-closed (resp. $g\zeta^*$-open) sets of a space X is denoted by $g\zeta^*$-C(X) (resp. $g\zeta^*$-O(X))

2.2 Definition. A subset A of a space (X, τ) is said to be
(1) generalized $g\zeta^*$-closed (briefly $gg\zeta^*$-closed) if $g\zeta^*$-cl(A) ⊂ U whenever A ⊂ U and U ∈ τ.
(2) regular generalized $g\zeta^*$-closed (briefly $rgg\zeta^*$-closed) if $g\zeta^*$-cl(A) ⊂ U whenever A ⊂ U and U is regular open in X.

2.3 Remark. We have the following implications for the properties of subsets:

Where none of the implications is reversible as can be seen from the following examples:

$$closed \Rightarrow \text{g-closed} \Rightarrow \text{rg-closed}$$
$$\Downarrow \qquad \Downarrow \qquad \Downarrow$$
$$\text{α-closed} \Rightarrow \text{αg-closed} \Rightarrow \text{rαg-closed}$$
$$\Downarrow \qquad \Downarrow \qquad \Downarrow$$
$$gg\zeta^*\text{-closed} \Rightarrow gg\zeta^*\text{-closed} \Rightarrow rgg\zeta^*\text{-closed}$$

2.4 Example. Let X = {a, b, c} and τ = {φ, {a}, X}. Then A = {b} is g-closed as well as αg-closed. Hence A is $gg\zeta^*$-closed. But it is not closed.

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DOES YOGA HELP ATHLETES

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...RACT

Yoga is an appropriate practice for many athletes, providing physical exercise, breath control and ...y; as well as mental focus. Yoga helps athletes gain knowledge about the mind and body connection, ...ng body awareness and enhancing mental clarity.

Studies conducted by the National Centre for Complementary and Alternative Medicine (UK) illustrate that ...sical benefits of yoga for athletes are: lowered heart rate, increased oxygen intake, functional strength and ...ity, but athletes also report enhanced focus and greater concentration.

Benefits of Yoga for Athletes

Many athletes find yoga helps with rehabilitating the body after an injury. Integrating yoga into athletic ...g helps athlete lessen their risk of injury and recovery time by gaining strength and flexibility without ...ng muscles. Yoga relieves muscle tension and loosens joints, hips, hamstrings and shoulders. Athlete who ...e yoga gain greater ability to manage their breath maximize oxygen intake and lessening loss of energy ...e endurance training. Yoga help athlete' slower blood pressure, mitigate aches and pains, manage intensity ...crease focus, preparing the body's physical response to challenging situations, as in competitive sports.

...ords: yoga, Practice, Athletes, Body's Physical Response

...Styles for Athletes

Athletes should pick a yoga practice that complements their training schedule. An intense daily workout ...ule could be balanced by a restorative yoga practice, or yin yoga class, helping athletes find a place to slow , ...relax and dive deep into tense and tight areas of the body. If you want your yoga practice to help the body ...me more energized for your sport, begin the day with strengthening yoga such as Ashtanga, Vinyasa or power ...to prepare the body for activity. Many yoga teachers will offer athletes insight into alignment of the muscles ...ones. Focus on alignment may be found with iyengar yoga. At the very least, a sequence of stretches may be ...iced before, during or after athlete training.

...a for Runners

Yoga provides a whole body workout for athletes, enhancing any cross-training program as a complement to ...g cardio vascular workouts. Practicing yoga is beneficial to runners because yoga helps maintain the balance ...ween strengthening and stitching. According to the American academy of family physicians, 70 percent of all ...ners will be injured. Yoga exercise help tone the core, improve your range of motion and balance the body. ...orbing the impact frequent running has on other areas of the body. Yoga for runners should incorporate breath ...k and balances to increase awareness of the body and breath.

...ga Exercises for Athletes

...gs and hamstring stretches will facilitate looser hamstring and greater flexibility. Seated spinal twists, standing

2016-17

NON – LINEAR OPTIMALITY MODELS WITH CONSTRAINTS

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ABSTRACT

The present work aims to decribe as simple as possible to evaluate several of the more effective methods of non linear and non smooth programming. If the function becomes non smooth with non linearty the solution techniques becomes more complicated. There is a rigorous development of first and second order optimality conditions. This work deals with the necessary and sufficient conditions for non linear and non smooth models (Ferris and Pang, 1995). Apart form the development of the theorical foundations of non linear and non smooth programming. The emphasis will be careful and detailed presentation of a number of solution algorithms, that have shown themselves to be of continuing importance and practical utility. We also derive necessary and sufficient conditions which are applicable to some special type of non linear and non smooth problems.

KEY WORDS :Non linear optimal conditions, interpolation etc.

In this work we shall discuss necessary and sufficient optimality conditions. Optimality conditions are of two types necessary conditions, which must hold at any minimizer for a model and sufficiency conditions, which is statisfied at a point, guarantee that the point is a minimizer (Baer, 1992 and Pazman, 2013). For the constrained case additional quantities are required. Conn, (1973) discussed about constrained optimization. We first develop the necessary conditions that require no consturint qualifications (Bertsekas 1982 and Cohen, 1972) suggested restriction which would be able to modify the development of such problems in which unconstrained local optima and their associated Lagrange multiplier values. The very Important Lagrange multipliers are generalised Lagrange function in the statement of the first order conditions (Evertt, 1963).

METHODOLOGY
Algebraic Derivation

Considerthe mathematical programming model including one or more equality constraints. We can reduce this model to one of the unconstrained optimization model by using the constraints to eliminate variables (Flether, 1987).Todevelop basic understanding of the method of Lagrange multiplier let us consider indetail the following model.

Max f(x) = f(x_1, x_2, x_3)
Subject to g(x_1, x_3, x_3) = 0
.... (1)
and h(x_1, x_2, x_3) = 0
The two constraints g(x) = 0, and h(x) = 0
Describe two surface in three dimensional Space.

Now consider the following mathematical model

Max f(x)
.... (2)
Subject to g(x) = b_i i = 1, 2, ...m,
Where x is an n – component vector and m < n.

Such that the jacobian matrix of first partial derivatives.

$$J = \begin{bmatrix} \frac{\delta c_1}{\delta x_1} & \frac{\delta g_1}{\delta x_m} \\ \frac{\delta g_m}{\delta x_1} & \frac{\delta g_m}{\delta x_m} \end{bmatrix}$$

Also since gradient vector ∇f is normal to the surface f = k_{max} then ∇f must also be normal. The two gradient ∇g and ∇h are normal to the surface g = 0, and h=0 respectively Thus there must exist three real numbers a_1, a_2, $a_3$not all zero (Mc Gree, 2008). Such that $a_1 \nabla f + a_2 \nabla g + a_3 \nabla h = 0$ at p

∇g and∇h must also intersect being normal
$a_2 - a_3 = 0$
$a_2 \nabla g + a_3 \nabla h = 0$
Hence a_1 can not be equal to zero and we may write

$\nabla f - \lambda_1 \nabla g - \lambda_2 \nabla h = h$ at p
Where $\lambda_1 = \frac{a_2}{a_1}$ and$\lambda_2 = \frac{a_3}{a_1}$

the λiare said to be the Lagrange multipliers.

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NON LINEAR CONSTRAINED MODELS TO SOLVE THE VARIOUS MATHEMATICAL PROBLEMS

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ABSTRACT

In this work I will discuss constrained optimal models. Constrained nonlinear and non smooth models are much complicated to solve the unconstrained ones with a comparable number of independent variables and degree of non linearity because of the additional requirement that the solution must satisfy the constraints. The number of constrained non linear and non smooth optimization procedure is centeredon one of three basic concepts.

KEY WORDS:Non linear optimization, optimal models, constrained models

Unconstrained optimization models arise directly in many practical applications. If there are natural constraints on the variables, it is sometime safe to disregard them and to assume that they have no effect on the optimal solution. Unconstrained models arise also as reformulations of constrained optimization models in which the constraints are replaced penalization terms in the objective function that have the effect of discouraging constraint violations. The general non linear programming model without constraint reduces to just.

Minimize $f(x)$ $x \in E^n$
.... (1)
Where $f(x)$ is the objective function?
Although most models arising in operations research have at least a few constraints with non negativityconstraints being the type most often encountered. On the other hand constrained optimization model arise from which include explicit constraints on the variables.

The general non linear constrained model is stated as follows

Min $f(x)$ $x = (x_1, x_2, \dots \dots \dots x_n,$
Subject to $g_i (x)$ $= b_i, i = 1, 2, \dots \dots \dots m$
Where fand g_i are scalar valued functions and b_i are real numbers.
The linearization of nonlinear models to meet the requirements for the iterativeapplications of linear programming method is one of the most obviousapproaches to solve nonlinear programs.

Linear approximation of non linear functions is accomplished by replacing the non linear functions with their first order Taylor's series approximate expanded at the point of iterest.

RESULTS AND DISCUSSION

Here I will use and explain the Quadratic Programming and some approximation methods. Various workers have developed algorithms to implement approximation of quadratic function instead of the linear functions Gill and Murray (1974) recognize that the second order methods in unconstrained optimization speed convergence extended the linear approximation to make a second order expansion of the general non linear model. First order conditions for a local stationary point were introduced. For an unconstrained model their algorithms stepped in the usual second order direction of descent with linear constraints and a quadratic objectve function. Their computational procedure reduced to that of Rockasfellar(1973).

Generalized gradient Search (G.G.S.)

The generalized gradient search program was developed by Powell and Yuan (1990) which can accommodate both linear and non linear equality and inequality constraints. The program follows a steepest descent search in the interior of the feasible region where the numerical approximation of the partial derivatives of the objective function and the step size in a given direction at (K+1) stage are functions of the number of successful steps on k^{th} stage. A gradient projection with linearized constraints is employed for the non trivial constraints. A projection technique is used to reach a feasible point from a non feasible starting point.

If a trivial constraint is violated, the stepsize in reduced by multiplying the current steplength by the ratio of distance between $x_j^{(K)}$ and its bounds if aprojection is to be made onto bounding constraint as an inequality constraint a different procedure is used. The component$\frac{\partial f(x^{(K)})}{\partial x_j}$

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QUASI γ-NORMAL SPACES IN TOPOLOGICAL SPACES

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ABSTRACT

In this paper, we introduce the concept of πgγ-closed sets as weak form of πg-closed sets. We also introduce the notion of quasi γ-normal spaces and by using πg-closed sets, we obtain a characterization and preservation theorems for quasi γ-normal spaces. Further we show that this property is a topological property and it is a hereditary property only with respect to closed domain subspaces. The relationships among normal, π-normal, quasi-normal, mildly-normal, p-normal, πp-normal, quasi p-normal, mildly p-normal, γ-normal, πγ-normal, quasi γ-normal, mildly γ-normal are investigated.

2010 AMS Subject classification: 54D15, 54D10, 54A05, 54C08.

Keywords: π-open, γ-open, and πgγ-closed sets; πgγ-closed, almost πgγ-closed, πgγ-continuous and almost πgγ-continuous functions; quasi γ-normal spaces.

1 INTRODUCTION

The notion of quasi normal space was introduced by Zaitsev [14]. Levine [6] initiated the investigation of g-closed sets in topological spaces. Singal and Singal [11] introduced the notion of mildly normal spaces which are weaker than quasi-normal spaces. Nour [9] introduced the notion of p-normal spaces and obtained their properties. Lal and Rahman [5] have further studied notions of quasi normal and mildly normal spaces. Dontchev and Noiri [1] introduced the notion of πg-closed sets as a weak form of g-closed sets due to Levine [6]. By using πg-closed sets, Dontchev and Noiri [1] obtained a new characterization of quasi normal spaces. Kalantan [4] introduced a weaker version of normality called π-normality and proved that π-normality is a property which lies between normality and almost normality. Ekici [2] introduced a new class of normal spaces, called γ-normal spaces and the relationships among s-normal, p-normal and γ-normal spaces are investigated. Thabit and Kamaruthaili [13] introduced a weaker version of p-normality called πp-normality, which lies between p-normality and almost p-normality. Recently, Thabit and Kamaruthaili [12] introduced a weaker form of p-normality called quasi p-normality, which lies between πp-normality and mild p-normality.

ALMOST γ-NORMAL AND MILDLY γ-NORMAL SPACES IN TOPOLOGICAL SPACES

Hamant Kumar and M. C. Sharma

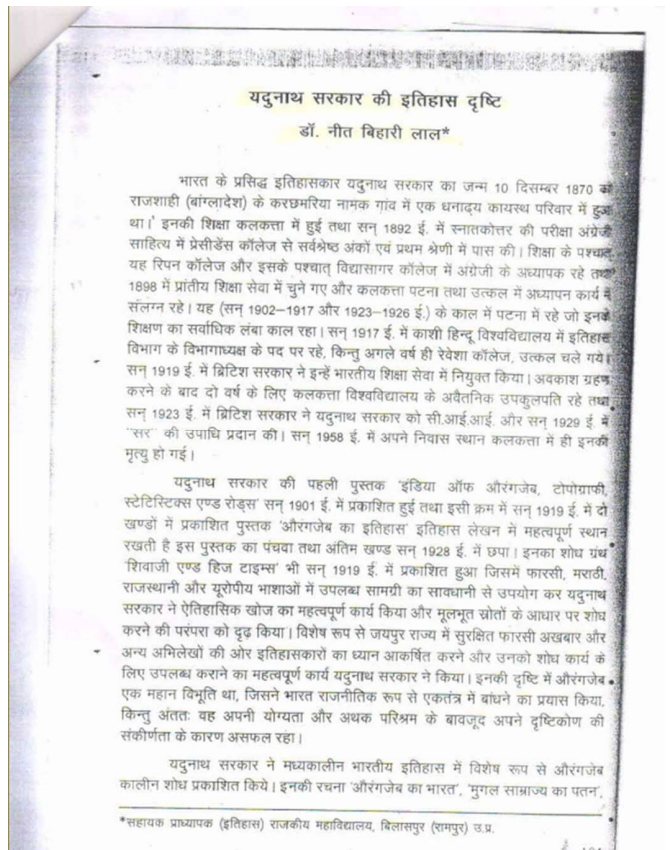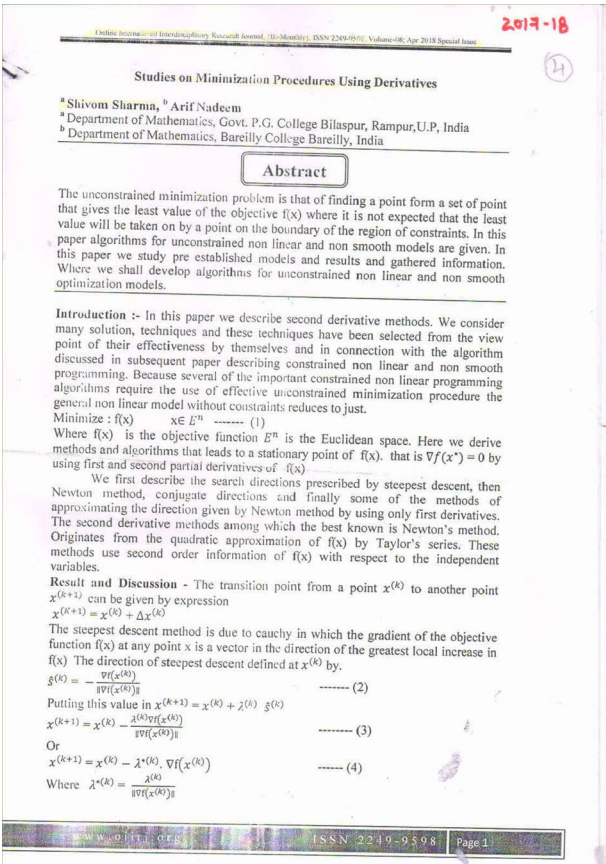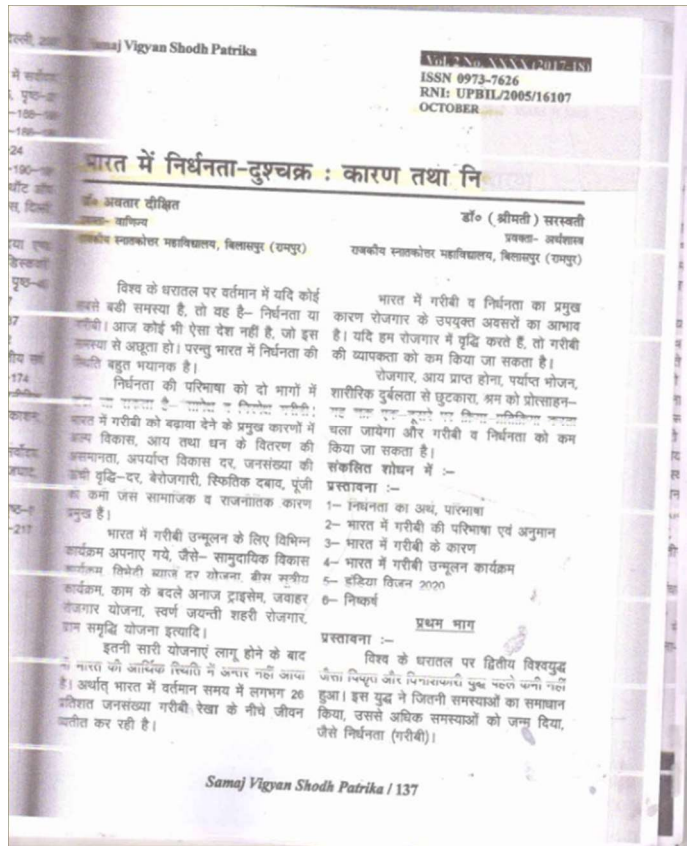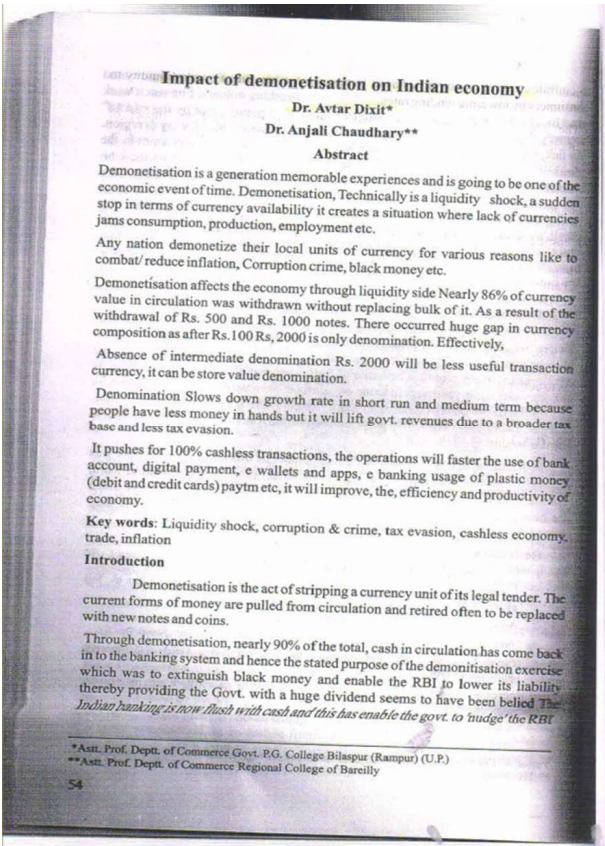Department of Mathematics, N. R. E. C. College, Khurja-203131.

ABSTRACT

The aim of this paper is to introduce and study two new classes of spaces, namely almost γ-normal and mildly γ-normal spaces are weaker forms of γ-normal spaces. We show that these normal spaces, namely almost γ-normal and mildly γ-normal spaces are regularly open hereditary. The relationships among normal, p-normal, γ-normal, β-normal, almost normal, almost p-normal, almost γ-normal, almost β-normal, quasi β-normal, mildly normal, mildly p-normal, mildly γ-normal, and mildly β-normal spaces are investigated. Moreover, we introduced some functions such as M-γ-open, M-γ-closed, almost γ-irresolute, rgγ-irresolute, rgγ-continuous and γ-rgγ-continuous. Further, utilizing gγ-closed and rgγ-closed sets, we obtain characterizations and preservation theorems for almost γ-normal and mildly γ-normal spaces.

Key words: γ-open sets, almost γ-normal, mildly γ-normal spaces. M-γ-open, M-γ-closed, almost γ-irresolute, rgγ-irresolute, rgγ-continuous and γ-rgγ-continuous functions.

2010 Mathematics subject classification: 54D10, 54D15, 54A05, 54C08.

1 INTRODUCTION

Levine [6] initiated the study of so called generalized closed (briefly g-closed) sets in order to extend many of the most important properties of closed sets to a large family. Singal and Arya [18] introduced the concept of almost normal spaces. Various properties of new classes of topological spaces have been studied and the relations of these new concepts with the concepts of almost regularity have also been investigated. The notion of mildly normal space was introduced by Shchepin [17] and Singal and Singal [19] independently. Nour [13] introduced a weaker form of normality called p-normality and obtained their properties. Mahmoud et al. [7] introduced the notion of β-normal spaces and obtained their characterizations and preservation theorems. E. Ekici [3] introduced a weaker form of γ-normality, called γ-normality and obtained their properties. The relationships among normal, p-normal, γ-normal and β-normal spaces are investigated. The notion of quasi β-normal and mildly β-normal spaces were introduced by M. C. Sharma and Hamant Kumar [16]. The notion of almost p-normal and mildly p-normal spaces were introduced by G. B. Navalagi [9].The notion of almost β-normal space was introduced by Nidhi Sharma [10].

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ξ-Normal and ξ-Regular Spaces in Topological Spaces

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Abstract: The aim of this paper is to introduce and study two new classes of spaces, namely ξ-normal and ξ-regular spaces in topological spaces. The relationships among normal, p-normal, α-normal, β-normal and ξ-normal spaces are investigated. Moreover, we introduced some functions such as gξ-closed, ξ-gξ-closed, pre ξ-open. We obtained some characterizations of ξ-normal and ξ-regular spaces, properties of the forms of gξ-closed functions and preservation theorems for ξ-normal and ξ-regular spaces.

Keywords: ξ-closed sets, ξ-normal, ξ-regular spaces, gξ-closed and ξ-gξ-closed functions

2010 Mathematics Subject Classification: 54D10, 54D15, 54A05, 54C08

1. Introduction

Levine [3] introduced generalized closed sets in general topology as a generalization of closed sets. This concept was found to be useful and many results in general topology were improved. α-open sets were introduced by Njastad [7]. Devi et al. [2] introduced the concept of ξ-closed sets. Nour [8] introduced the notion of p-normal spaces and obtained their characterizations and preservation theorems. Paul and Bhattacharyya [9] obtained some properties of p-normal spaces. Benchalli et al. [1] introduced the notion of α-normal spaces and obtained their characterizations and preservation theorems. Mahmoud et al. [4] introduced the notion of β-normal spaces and obtained their characterizations and preservation theorems. Recently, Sharma et al. [10] introduced a new class of regular spaces called ξ-regular spaces by using ξ-open sets introduced by Devi et al. [2] and obtained several properties such as characterizations and preservation theorems for ξ-regular spaces.

2. Preliminaries

Throughout this paper, spaces (X, τ), (Y, σ), and (Z, γ) always mean topological spaces on which no separation axioms are assumed unless explicitly stated. Let A be a subset of a space X. The closure of A and interior of A are denoted by Cl(A) and Int(A) respectively. A is said to be α-open [1] if A ⊂ Int(Cl(Int(A))). The complement of α-open set is said to be α-closed [1]. The intersection of all α-closed sets containing A is called α-closure [2] of A, and is denoted by αCl(A).

2.1 Definition. A subset A of a space (X, τ) is said to be

1. generalized closed (briefly g-closed) [3] if Cl(A) ⊂ U whenever A ⊂ U and U ∈ τ.

2. generalized α-closed (briefly αg-closed) [6] if αCl(A) ⊂ U whenever A ⊂ U and U ∈ τ.

3. generalized α-closed (briefly gα-closed) [5] if αCl(A) ⊂ U whenever A ⊂ U and U is α-open in X.

4. ξ-closed [2] if αCl(A) ⊂ U whenever A ⊂ U and U is gα-open in X.

5. g-open (resp. αg-open, gα-open, ξ-open) if the complement of A is g-closed (resp. αg-closed, gα-closed, ξ-closed).

The intersection of all ξ-closed sets containing A is called ξ-closure of A, and is denoted by ξCl(A). The ξ-interior of A, denoted by ξInt(A), is defined as union of all ξ-open sets contained in A. The family of all ξ-closed (resp. ξ-open) sets of a space X is denoted by ξC(X) (resp. ξO(X)).

2.2 Lemma. Let A be a subset of a space X and x ∈ X. The following properties hold for ξCl(A):

(i) x ∈ ξCl(A) if and only if A ∩ U ≠ φ for every U ∈ ξO(X) containing x.
(ii) A is ξ-closed if and only if A = ξCl(A).
(iii) ξCl(A) ⊂ ξCl(B) if A ⊂ B.
(iv) ξCl(ξCl(A)) = ξCl(A).
(v) ξCl(A) is ξ-closed.

2.3 Definition. A subset A of a space X is said to be generalized ξ-closed (briefly gξ-closed) if ξCl(A) ⊂ U whenever A ⊂ U and U ∈ τ.

2.4 Remark. We have the following implications for the properties of subsets:

closed ⇒ g-closed
⇓ ⇓
α-closed ⇒ αg-closed
⇓ ⇓
ξ-closed ⇒ gξ-closed

Where none of the implications is reversible as can be seen from the following examples:

2.5 Example Let X = {a, b, c} and τ = {∅, {a}, X}. Then A= {b} is g-closed but not closed.

Paper ID: IJSER171839

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Almost β-Regular Spaces and Almost rgβ-Closed Functions

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Abstract: The aim of this paper is to introduce and study a new class of spaces, namely almost β-regular spaces which are generalizations of the concepts of almost regular spaces and β-regular spaces and to obtain some characterizations of almost β-regular spaces. Further, by using rgβ-closed sets, we define almost rgβ-closed functions and to obtain preservation theorems of almost β-regular spaces. The relationships among p-regular, β-regular, almost regular, almost p-regular, almost β-regular spaces are investigated. The main result of this paper is that almost β-regularity is preserved under M-β-open surjective R-maps.

MSC: 54D10, 54D15, 54A05, 54C08.

Keywords: β-open and regular open sets, almost regular and almost β-regular spaces, β-rgβ-closed, β-rgβ-closed, almost β-closed, almost rgβ-closed and almost continuous functions.

© 28 Publication.

Accepted on: 23.04.2018

1. Introduction

In 1969, Singal and Arya [20] introduced a weak form of regular spaces called almost regular spaces and obtained their characterizations. In 1970, Levine [6] introduced and studied generalized closed sets in general topology as a generalization of closed sets. This concept was found to be useful and many results in general topology were improved. In 1983, El-Deeb [5] introduced the notion of p-regular spaces by using p-open sets and obtained their characterizations and preservation theorems. In 1985, Mahmoud [7] introduced the concept of β-regular spaces. In 1990, Malghan and Navalagi [10] defined and studied almost p-regular spaces which were generalizations of both almost regular spaces and p-regular spaces. In 2003, palaniappan and Rao [16] introduced and studied regular generalized closed sets. In 1995, Dontchev [4] defined and investigated generalized β-closed sets. In 1996, Noiri [14] introduced rgp-closed sets and used these sets to obtain further characterizations of almost regular spaces and almost p-regular spaces. In 2005, Tahiliani [22] introduced generalized β-closed functions and obtained some new characterizations of β-regular spaces. Recently, by using β-closed sets, M. C. Sharma and Hamant Kumar [19] introduced almost β-closed functions.

In this paper, we introduce and study a new class of spaces, namely almost β-regular spaces and to obtain some characterizations of almost β-regular spaces. Further, by using rgβ-closed sets, we define β-rgβ-closed functions and to obtain preservative theorems of almost β-regular spaces. The relationships among p-regular, β-regular, almost regular, almost p-regular, almost β-regular spaces are investigated. The main result of this paper is that almost β-regularity is preserved under M-β-open rgβ-closed surjective R-maps.

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Contribution of Ashtang Yoga in Enhancing the Psychological Variable and Quality Of Life of Young Adults

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Abstract

The purpose of the research was to evaluate the Psychological variable effects of four months of daily practice (except Sunday and gazzeted holidays) ashtang yoga training. The hypothesis was that four months of ashtang yoga practice would have positive effects on Psychological variable -Attention capacity as supported by previous research. The participants included 80 adults (male and female) both from Govt. P.G College, Bilaspur Rampur (U.P). The subjects were ranging from 18-21 years of age. The subjects were divided into two equal groups consisting of forty subjects each belonging to one experimental and one control group. Participant in the group engaged in 1 hour of ashtang yoga, daily practice (except Sunday and gazzeted holidays) over a four month of period, while the Control group not exposed to any kind of activity.

(Statistical analysis revealed significant effect of ashtang yoga practice)

An analysis of variance (ANOVA) found a statistically significant improvement between pre and post tests core on all the variables. This study concludes that four month ashtang yoga practice provide a sufficient stimulus to improve the Psychological variable in untrained college adults.

Key Words: Ashtang Yoga, Psychological, Young Adults, Quality of Life

1. Introduction:

All the orthodox systems of Indian Philosophy have one goal in view, the liberation of the soul through perfection. The method is by Yoga. Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in India that has become increasingly more common in Western society.

योगश्चित्त वृत्ति निरोधः "Yoga is the restraint of the modifications of the mind-stuff" - Sage Patanjali (sutra 1.2); translation by Swami Vivekananda Even though yoga has been mentioned in various ancient texts, including the Vedas, Upanishads, the Bhagavad Gita etc, the credit for putting together a formal, cohesive philosophy of yoga goes to Sage Patanjali. In his Yoga Sutras, Patanjali has provided the very essence of the philosophy and teachings of yoga in a highly scientific and systematic exposition. The Yoga Sutras of Patanjali (YSP) form the basis for one of the six Hindu schools of philosophy (or 'shad-darshana,' literally six philosophies) and are a very important milestone in the history of Yoga. The book is a set of 195 aphorisms (sutras), which are short, terse phrases designed to be easy to memorize. Though brief, the Yoga Sutras are an enormously influential work that is just as relevant for yoga philosophy and practice today as it was when it was written.

The Yoga Sutras of Patanjali are also sometimes referred to as "Raja Yoga" or the "Royal Yoga".

Yoga is an ancient Indian practice of breathing, focus and postures that brings tranquility, health, energy and ultimately a greater connection with oneself. The word yoga in Sanskrit translates as "yoke" or "union" and the origins of yoga can be traced as far as 4500 BC Everyone can do yoga; young children, grandparents, professional athletes and "weekend warriors". The evidence used to validate the health and wellbeing benefits of yoga is often anecdotal.

Yoga as described in the Yoga Sutras of Patanjali refers to Ashtanga Yoga. The Yoga Sutras of Patanjali is considered as a central text of the Yoga school of Hindu philosophy, it is often called "Raja yoga", "yoga of the kings," a term which originally referred to the ultimate, royal goal of yoga, which is usually Samadhi, but was popularized by

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Quasi ξ- Normal Spaces and Gξ-Closed Sets

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Abstract

In this paper, we introduce the concept of gξ-closed sets as a weak form of g-closed sets. By utilizing gξ-closed sets, we define gξ-closed, almost gξ-closed, gξ-continuous and almost gξ-continuous functions. We also introduce the notion of quasi ξ-normal spaces and obtain a characterization and some preservation theorems for quasi ξ-normal spaces. Further we show that this property is a topological property and it is a hereditary property only with respect to closed domain subspaces. The relationships among normal, π-normal, quasi normal, mildly normal, α-normal, su-normal, quasi α-normal, softly α-normal, mildly α-normal, ξ-normal, πξ-normal, quasi ξ-normal, softly ξ-normal and mildly ξ-normal are investigated.

1. Introduction

The concept of α-open sets were introduced by Njastad [10]. The notion of quasi normal space was introduced by Zaitsev [14]. Levine [8] initiated the study of so called g-closed sets in order to extend many of the most important properties of closed sets to a large family. This concept was found to be useful and many results in general topology were improved. Singal and Singal [13] have introduced the notion of mildly normal spaces which are weaker form of quasi normal spaces due to Zaitsev [14]. Lal and Rahman [7] have further studied notions of quasi normal and mildly normal spaces. Dontchev and Noiri [4] introduced the g-closed sets as a weak form of g-closed sets due to Levine [8]. By using g-closed sets, Dontchev and Noiri [4] obtained a new characterization and some preservation theorems for quasi normal spaces. Devi et al. [3] introduced the concept of ξ-closed sets. Arockiarani and Janaki [1] introduced the concept of πga-closed sets as a weak form of πg-closed sets due to Dontchev and Noiri [4] and by using πga-closed sets, obtained a characterization and some preservation theorems for quasi α-normal spaces. Kalantan [6] introduced a weaker version of normality called π-normality and proved that π-normality is a property which lies between normality and almost normality. The notion of α-normal space was introduced by Benchalli and Patil [2]. Hamant Kumar and M. C. Sharma [12] introduced the concept of softly normal spaces and obtained its properties. Hamant Kumar [5] introduced the concept of gξ-closed sets and by using gξ-closed sets, obtained a characterization and some preservation theorems for ξ-normal and ξ-regular spaces.

2010 AMS Subject classification: 54D15, 54D10, 54A05, 54C08.
Keywords: α-open, ξ-open, gξ-open, α-closed, ξ-closed, and gξ-closed sets; gξ-closed, almost gξ-closed, gξ-continuous and almost gξ-continuous functions; quasi ξ-normal spaces.

Impact of demonetisation on Indian economy

Dr. Avtar Dixit*
Dr. Anjali Chaudhary**

Abstract

Demonetisation is a generation memorable experiences and is going to be one of the economic event of time. Demonetisation, Technically is a liquidity shock, a sudden stop in terms of currency availability it creates a situation where lack of currencies jams consumption, production, employment etc.

Any nation demonetize their local units of currency for various reasons like to combat/reduce inflation, Corruption crime, black money etc.

Demonetisation affects the economy through liquidity side Nearly 86% of currency value in circulation was withdrawn without replacing bulk of it. As a result of the withdrawal of Rs. 500 and Rs. 1000 notes. There occurred huge gap in currency composition as after Rs.100 Rs, 2000 is only denomination. Effectively,

Absence of intermediate denomination Rs. 2000 will be less useful transaction currency, it can be store value denomination.

Denomination Slows down growth rate in short run and medium term because people have less money in hands but it will lift govt. revenues due to a broader tax base and less tax evasion.

It pushes for 100% cashless transactions, the operations will faster the use of bank account, digital payment, e wallets and apps, e banking usage of plastic money (debit and credit cards) paytm etc, it will improve, the, efficiency and productivity of economy.

Key words: Liquidity shock, corruption & crime, tax evasion, cashless economy, trade, inflation

Introduction

Demonetisation is the act of stripping a currency unit of its legal tender. The current forms of money are pulled from circulation and retired often to be replaced with new notes and coins.

Through demonetisation, nearly 90% of the total, cash in circulation has come back in to the banking system and hence the stated purpose of the demonitisation exercise which was to extinguish black money and enable the RBI to lower its liability thereby providing the Govt. with a huge dividend seems to have been belied The Indian banking is now flush with cash and this has enable the govt. to 'nudge' the RBI

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भारत में निर्धनता-दुश्चक्र : कारण तथा नि

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विश्व के धरातल पर वर्तमान में यदि कोई सबसे बड़ी समस्या है, तो वह है– निर्धनता या गरीबी। आज कोई भी ऐसा देश नहीं है, जो इस समस्या से अछूता हो। परन्तु भारत में निर्धनता की स्थिति बहुत भयानक है।

निर्धनता की परिभाषा को दो भागों में ...

भारत में गरीबी को बढ़ावा देने के प्रमुख कारणों में अल्प विकास, आय तथा धन के वितरण की असमानता, अपर्याप्त विकास दर, जनसंख्या में तीव्री वृद्धि–दर, बेरोजगारी, स्फीतिक दबाव, पूंजी का कमा जस सामाजिक व राजनीतिक कारण प्रमुख हैं।

भारत में गरीबी उन्मूलन के लिए विभिन्न कार्यक्रम अपनाए गये, जैसे– सामुदायिक विकास कार्यक्रम त्रिभरी ब्याज दर योजना, बीस सूत्रीय कार्यक्रम, काम के बदले अनाज ट्राइबेम, जवाहर रोजगार योजना, स्वर्ण जयन्ती शहरी रोजगार, ग्राम समृद्धि योजना इत्यादि।

इतनी सारी योजनाएं लागू होने के बाद भी भारत की आर्थिक स्थिति में अन्तर नहीं आया है। अर्थात् भारत में वर्तमान समय में लगभग 26 प्रतिशत जनसंख्या गरीबी रेखा के नीचे जीवन व्यतीत कर रही है।

भारत में गरीबी व निर्धनता का प्रमुख कारण रोजगार के उपयुक्त अवसरों का अभाव है। यदि हम रोजगार में वृद्धि करते हैं, तो गरीबी की व्यापकता को कम किया जा सकता है।

रोजगार, आय प्राप्त होना, पर्याप्त भोजन, शारीरिक दुर्बलता से छुटकारा, श्रम को प्रोत्साहन– चला जायेगा और गरीबी व निर्धनता को कम किया जा सकता है।

संकलित शोधन में :–

प्रस्तावना :–

1– निर्धनता का अर्थ, परिभाषा
2– भारत में गरीबी की परिभाषा एवं अनुमान
3– भारत में गरीबी के कारण
4– भारत में गरीबी उन्मूलन कार्यक्रम
5– इण्डिया विजन 2020
6– निष्कर्ष

प्रथम भाग

प्रस्तावना :–

विश्व के धरातल पर द्वितीय विश्वयुद्ध हुआ। इस युद्ध ने जितनी समस्याओं का समाधान किया, उससे अधिक समस्याओं को जन्म दिया, जैसे निर्धनता (गरीबी)।

Studies on Minimization Procedures Using Derivatives

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Abstract

The unconstrained minimization problem is that of finding a point form a set of point that gives the least value of the objective f(x) where it is not expected that the least value will be taken on by a point on the boundary of the region of constraints. In this paper algorithms for unconstrained non linear and non smooth models are given. In this paper we study pre established models and results and gathered information. Where we shall develop algorithms for unconstrained non linear and non smooth optimization models.

Introduction :- In this paper we describe second derivative methods. We consider many solution, techniques and these techniques have been selected from the view point of their effectiveness by themselves and in connection with the algorithm discussed in subsequent paper describing constrained non linear and non smooth programming. Because several of the important constrained non linear programming algorithms require the use of effective unconstrained minimization procedure the general non linear model without constraints reduces to just.

Minimize : f(x) $x \in E^n$ ------- (1)

Where f(x) is the objective function E^n is the Euclidean space. Here we derive methods and algorithms that leads to a stationary point of f(x). that is $\nabla f(x^*) = 0$ by using first and second partial derivatives of f(x)

We first describe the search directions prescribed by steepest descent, then Newton method, conjugate directions and finally some of the methods of approximating the direction given by Newton method by using only first derivatives. The second derivative methods among which the best known is Newton's method. Originates from the quadratic approximation of f(x) by Taylor's series. These methods use second order information of f(x) with respect to the independent variables.

Result and Discussion - The transition point from a point $x^{(k)}$ to another point $x^{(k+1)}$ can be given by expression

$x^{(k+1)} = x^{(k)} + \Delta x^{(k)}$

The steepest descent method is due to cauchy in which the gradient of the objective function f(x) at any point x is a vector in the direction of the greatest local increase in f(x) The direction of steepest descent defined at $x^{(k)}$ by.

$\hat{s}^{(k)} = -\dfrac{\nabla f(x^{(k)})}{\|\nabla f(x^{(k)})\|}$ ------- (2)

Putting this value in $x^{(k+1)} = x^{(k)} + \lambda^{(k)} \hat{s}^{(k)}$

$x^{(k+1)} = x^{(k)} - \dfrac{\lambda^{(k)} \nabla f(x^{(k)})}{\|\nabla f(x^{(k)})\|}$ -------- (3)

Or

$x^{(k+1)} = x^{(k)} - \lambda^{*(k)} . \nabla f(x^{(k)})$ ------ (4)

Where $\lambda^{*(k)} = \dfrac{\lambda^{(k)}}{\|\nabla f(x^{(k)})\|}$

यदुनाथ सरकार की इतिहास दृष्टि

डॉ. नीत बिहारी लाल*

भारत के प्रसिद्ध इतिहासकार यदुनाथ सरकार का जन्म 10 दिसम्बर 1870 को राजशाही (बांग्लादेश) के करछमरिया नामक गांव में एक धनाढय कायस्थ परिवार में हुआ था। इनकी शिक्षा कलकत्ता में हुई तथा सन् 1892 ई. में स्नातकोत्तर की परीक्षा अंग्रेजी साहित्य में प्रेसीडेंस कॉलेज से सर्वश्रेष्ठ अंकों एवं प्रथम श्रेणी में पास की। शिक्षा के पश्चात् यह रिपन कॉलेज और इसके पश्चात् विद्यासागर कॉलेज में अंग्रेजी के अध्यापक रहे तथा 1898 में प्रांतीय शिक्षा सेवा में चुने गए और कलकत्ता पटना तथा उत्कल में अध्यापन कार्य में संलग्न रहे। यह (सन् 1902–1917 और 1923–1926 ई.) के काल में पटना में रहे जो इनके शिक्षण का सर्वाधिक लंबा काल रहा। सन् 1917 ई. में काशी हिन्दू विश्वविद्यालय में इतिहास विभाग के विभागाध्यक्ष के पद पर रहे, किन्तु अगले वर्ष ही रेवेशा कॉलेज, उत्कल चले गये। सन् 1919 ई. में ब्रिटिश सरकार ने इन्हें भारतीय शिक्षा सेवा में नियुक्त किया। अवकाश ग्रहण करने के बाद दो वर्ष के लिए कलकत्ता विश्वविद्यालय के अवैतनिक उपकुलपति रहे तथा सन् 1923 ई. में ब्रिटिश सरकार ने यदुनाथ सरकार को सी.आई.ई. और सन् 1929 ई. में 'सर' की उपाधि प्रदान की। सन् 1958 ई. में अपने निवास स्थान कलकत्ता में ही इनकी मृत्यु हो गई।

यदुनाथ सरकार की पहली पुस्तक इंडिया ऑफ औरंगजेब, टोपोग्राफी, स्टेटिस्टिक्स एण्ड रोड्स सन् 1901 ई. में प्रकाशित हुई तथा इसी क्रम में सन् 1919 ई. में दो खण्डों में प्रकाशित पुस्तक 'औरंगजेब का इतिहास' इतिहास लेखन में महत्वपूर्ण स्थान रखती है इस पुस्तक का पंचवा तथा अंतिम खण्ड सन् 1928 ई. में छपा। इनका शोध ग्रंथ शिवाजी एण्ड हिज टाइम्स' भी सन् 1919 ई. में प्रकाशित हुआ जिसमें फारसी, मराठी, राजस्थानी और यूरोपीय भाषाओं में उपलब्ध सामग्री का सावधानी से उपयोग कर यदुनाथ सरकार ने ऐतिहासिक खोज का महत्वपूर्ण कार्य किया और मूलभूत स्रोतों के आधार पर शोध करने की परंपरा को दृढ़ किया। विशेष रूप से जयपुर राज्य में सुरक्षित फारसी अखबार और अन्य अभिलेखों की ओर इतिहासकारों का ध्यान आकर्षित करने और उनको शोध कार्य के लिए उपलब्ध कराने का महत्वपूर्ण कार्य यदुनाथ सरकार ने किया। इनकी दृष्टि में औरंगजेब एक महान विभूति था, जिसने भारत राजनीतिक रूप से एकत्र में बांधने का प्रयास किया, किन्तु अंततः वह अपनी योग्यता और अथक परिश्रम के बावजूद अपने दृष्टिकोण की संकीर्णता के कारण असफल रहा।

यदुनाथ सरकार ने मध्यकालीन भारतीय इतिहास में विशेष रूप से औरंगजेब कालीन शोध प्रकाशित किये। इनकी रचना 'औरंगजेब का भारत', 'मुगल साम्राज्य का पतन',

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जी0 एस0 टी0 तथा राज्यों के राजस्व संग्रह में कमी व क्षतिपूर्ति

डॉ. अवतार दीक्षित*

आम बजट पेश होने के पश्चात जी0 एस0 टी0 को लागू हुए लगभग सात माह पूरे हो जायेगें. अभी तक का अनुभव यह बता रहा है कि व्यापारियों का एक वर्ग येन–केन प्रकरेण टैक्स बचाने वाले तौर–तरीकों को अपनाये हुए है। जी0 एस0 टी0 की कंपोजीसन स्कीम के तहत जिन व्यापारियों ने अपना पंजीकरण कराया है उनसे अब तक बामुश्किल तीन सौ करोड़ रु0 का कर एकत्र हो पाया है, जबकि पंजीकरण कराने वाले व्यापारियों की संख्या 11 लाख से अधिक है। स्पष्ट है कि तमाम व्यापारी गलत तरीके से अपना टर्नओवर 20 लाख ही दिखा रहे है। जी0 एस0 टी0 काउन्सिल की बैठक में वित्त मंत्री अरूण जेटली ने इसका उल्लेख भी किया है। उन्होने कहा कि राज्यों को इस छल–फरेब के प्रति सचेत रहना चाहिए। क्योंकि इससे राज्यों का कर संग्रह गिर रहा है तथा कर संग्रह गिरने का सीधा असर आम बजट पर पड़ सकता है। इसमें तमाम विकास योजनाएं प्रभावित हो सकती है। जैसे– शिक्षा व स्वास्थ्य जैसी बुनियादी जरुरतों के साथ सामाजिक योजनाओं पर राजस्व संग्रह में कमी विपरीत प्रभाव डाल सकती है।

जी0 एस0 टी0 लागू होने के बाद राज्यों के राजस्व संग्रह में कमी का सिलसिला थम नही रहा है। हाल यह है कि राज्यों के राजस्व में कमी का आकड़ा क्षति पूर्ति सेस के रुप में सरकार को प्राप्त हो रही धनराशि से भी अधिक है। यदि सेस के संग्रह में वृद्धि नही हुई तो केन्द्र सरकार को राज्यों को होने वाली राजस्व क्षति की भरपाई अपने खजाने से करनी पड़ेगी।

जी0एसटी0 कानून के तहत जी0एस0टी0 लागू होने के चलते राज्यों को जितनी राजस्व हानि होगी, केन्द्र सरकार उसकी भरपाई सेस से करेगी। जी0एस0टी0 कानून के तहत प्रत्येक राज्य के लिए अपेक्षित राजस्व संग्रह का एक आंकड़ा फिक्स किया गया है। और अगर वहाँ जी0एस0टी0 संग्रह आंकड़े से कम रहता है तो उसकी भरपायी का दायित्व केन्द्र का होता है। ऐसे में यदि क्षतिपूर्ति सेस से कम राशि आती है तो फिर केन्द्र सरकार को अपने खजाने से राज्यों को क्षतिपूर्ति करनी होगी।

केन्द्रीय वित्त मंत्री अरूण जेटली की अध्यक्षता में जी0एस0टी0 काउंसिल की 25 वी बैठक में चालू वित्त बर्ष में अब तक जी0एस0टी0 के संग्रह के ट्रेंड का जायजा भी लिया गया। जिसमें चौंकाने वाले तथ्य सामने आये। अब तक प्राप्त जानकारी के मुताबिक अगस्त से दिसम्बर के दौरान क्षतिपूर्ति सेस से हर महीने औसतन 7615 करोड़ रुपये प्राप्त हुए है। जबकि इस दौरान राज्यों के राजस्व संग्रह में जो कमी रही है उसका आंकड़ा काफी अधिक है। उदाहारण के तौर पर दिसम्बर में ही सभी राज्यों को 8894 करोड़ रुपये राजस्व हानि हुयी जबकि इस महीने में क्षतिपूर्ति सेस से मात्र 7848 करोड़ रुपये ही राजस्व प्राप्त हुआ है।

यह आंकड़ा इसलिए महत्वपूर्ण है क्योंकि जी0एस0टी0 कानून के तहत जी0एस0टी0 लागू होने के चलते राज्यों को जितनी राजस्व हानि होगी, केन्द्र सरकार उसकी भरपायी क्षतिपूर्ति सेसं से करेगी।

वास्तव में (1) जुलाई 2017 से जी0एस0टी0 लागू होने के बाद शुरुआती महीनों में राज्यों को

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HUMAN AND SOCIAL DEVELOPMENT APPROACH IN PRESENT HIGHER EDUCATION SYSTEM IN INDIA

Dr. Avtar Dixit*
Dr. Saraswati**

Education builds character, contribute to efficient human development. Improvement of human needs higher investments on social sector, which lead to higher growth of a Nation .

Our great Religion culture, Ideology and great Religion books like Ved Purana and Ithihasa laid great stress on education and have shown characters that contributed to the growth of the ... Lord Rama is a Great Example of reputed character and immense health, which made Him ... a great deal for the rule of Rama Rajya – a perfect democracy linked to efficient development ... State . Even today His rule and His Satae. Ayodhya is a model being pursued through with the ... modern science and technology. Education has Played a positive role in human development.

Mahatma Gandhi ji very clearly and correctly wrote that education is the strong base for ... a strong character social culture as well as strong India. He emphasized. "basic education "to ... that people can live a happy life living only in villages, avoiding migration to cities. Moreover ... government to educate women who are the main pillars of society. Swami Vivekananda ... to strong man (women also included) with strong mind and strong heath, so that India could ... a strong and wealthy Nation world. He, in particular, wanted to promote women's education ... the entire Nation. He advocates universities of education and health in India so that Nation can ... the efficient human resources. The core components of human development are: education ...

Higher education, in India is gradually entering into crisis situation, facing many problems ... inadequacies. Though its spread is quite rapid, its step decline in quality is equally rapid with ... of financial resources, proper infrastructure adequate qualified staff etc. though government ... to allot nearly one percent of G.D.P. for higher education, government has settled at 0.8% ...-06 which may further Decline for want of sufficient resources. Whereas foreign countries are ... their allocation in higher education, research and development, India has not taken a leaf ... their experience.

India's elite scientific and educational institutions maintain quite high standard In some ..., the quality of education is very high and at par with the rest of the world. Since salary of ... in India is very low in comparison to the industrial world, professional services in India ... very favorably international competitiveness. Right now this is utilized mainly in information ..., biotechnology, health care, banking, finance and in few other services. But there is a ... of scope to expand it in almost all other services where we have already attained a fair ... of professional expertise. India can also be a centre of research and development due to high ... educational base in many fields of science and technology.

In India the average workers, especially in the Informal sector, whether in agriculture, ..., or in Services, is poorly educated. They also suffer from poor health. The average ... productivity is therefore low, and in spite of low wage, the real cost of labour is quite high.

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ROLE OF DIFFERENT AGENCIES IN INFORMAL EDUCATION

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ABSTRACT

Education is a thoughtful process by which the inner powers of the individual are developed. Education is verb broad in it, true sense and is not confined to school experiences. But in a narrow sense education is a well-planned process. Education may be defined as a purposive conscious or unconscious psychological, sociological, scientific and philosophical process which brings about the development of the individual to the fullest extent and also the maximum happiness and prosperity. T. Reymont has rightly remarked- "Education is that process of development in which consist the passage of human being from infancy to maturity, the process whereby he adapts himself gradually in various ways to his physical, social and spiritual environment."

There are three important types of education, Formal, Non-formal Informal Formal education is that education where according to predetermined aims and methods of teaching, definite dozes of knowledge are thrust into the mind of a child at a specific place during a set duration of a particular individual. e.g. schools, ...

Informal education is natural an ...

incidental. There are no predetermined aims curricula, methods, teachers and places where children receive informal education: e.g. Family, community, peer groups, etc.

Non-formal education is in between the formal and informal types of education. It is midway because it is partly formal and partly informal it is both intentional and incidental e.g. open schools, open universities, correspondence courses etc.

Sir Godfrey Thomas has written, ... "The whole of environment is the instrument of man's education in the wildest sense. But all that environment certain factors are distinguishable as more particularly concerned ... the home, the school, the church, press, the vacation, public life, amusement and hobbies ... Generally of course, the process of education continues from birth to death, but some specific institution play more important part in it. After ... these institutions are the agencies of education and they include all these factors, bases, places ... or institution, which have an educative influence upon the child. Hence, the institution, agencies and bases of education mean the same thing ...

... disusing about informal education and its ...

Research article
CONTRIBUTION OF ASHTANGA YOGA IN ENHANCING THE PHYSICAL FITNESS YOUNG ADULTS

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Abstract

The purpose of the research was to evaluate the Physical fitness effects of four months of daily practice (except Sunday and gazzeted holidays) of ashtanga yoga training .The hypothesis was that four months of ashtanga yoga practice would have positive effects on Physical fitness components Functional capacity and Cardio – respiratory endurance, Body composition, Abdominal strength, Endurance and Speed, Flexibility of the lower back and hamstrings muscles as supported by previous research. The participants included 80 adults (male and female) both from Govt. P.G College, Bilaspur Rampur (U.P). The subjects were ranging from 18-21 years of age. The subjects were divided into two equal groups consisting of forty subjects each belonging to one experimental and one control group. Participant in the group engaged in 1 hour of ashtang yoga, daily practice (except Sunday and gazzeted holidays) over a four month of period, while the Control group was not exposed to any kind of activity. An analysis of variance (ANOVA) found a statistically significant improvement between pre and post tests core on all the variables. This study concludes that four month ashtanga yoga practice provide a sufficient stimulus to improve all three variables in untrained college adults.
Key words: Ashtanga yoga, Physical fitness, young adults

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INTRODUCTION

All the orthodox systems of Indian Philosophy have one goal in view, the liberation of the soul through perfection. The method is by Yoga. Yoga is an ancient discipline designed to bring balance and health to the physical, mental, emotional, and spiritual dimensions of the individual. It is long popular practice in

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Article 1

Review Article
Ocimum sanctum - A Religious and Medicinal herb

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Abstract

Ocimum sanctum, A medicinal herb, belongs to the family Lamiaceae. It is erect, branched and fragrant, having height of about 30-60 cm. Different part of the plant are used to cure so many diseases, such as headache, leucoderma, asthma, bronchitis, fever, vomiting, hiccups, ophthalmic, genitourinary disorders, ring worms and skin diseases, coughs, diarrhea, constipation, wart, worm, influenza, common cold, colic pain, hepatic diseases, arthritis, digestive disorders and kidney dysfunctions. It has variety of pharmacological activities such as Anti microbial activity, Antidiabetic activity, Antistress activity, Antifertility activity, Hepatoprotective activity, Immunomodulatory activity, Psychopharmacological activity, Antioxidant activity, Antipyretic activity, Anticarcinogenic activity, Antiasthmatic activity, Antiulcerogenic activity, Radioprotective activity, Anticarcinogenic activity, Antiasthmatic activity, Antiinflammatory activity, Antiarthritic activity, Anticoagulant activity , Chemopreventive activity, Antianalgesic activity, Mosquitocidal activity and Antilipidemic activity. The present review article includes the description of plant, distribution, botanical characteristics, chemicals, traditional uses and pharmacological activity.

Keywords: Tulsi, Ocimum, Medicinal, Ayurveda, Religious Plant.

Introduction

Ocimum sanctum, popularly known as Tulsi, is one of the sacred annual herb belongs to the genus Ocimum and mint family Lamiaceae. Tulsi is a native of Iran, Afganistan and India (Zargari, 1990; Mirhaidar, 1990; Volak and Jiri, 1997 and Mann et al. 2000). Tulsi is believed the "Queen of Herbs" (Verma, 2016). It is most therapeutic herbs distributed mainly in the all regions of India (Jeba et al. 2011). Tulsi is one of the chief sources of large number of drugs and medicine (Kumar et al. 2011). There were two main varieties of tulsi have been identified i.e. black (Krishna tulsi) and green (Rama tulsi), both have similar chemical constituents. Both the varities have common medicinal properties (Das and Vasudevan, 2006 ; Mondal et al. 2009 ; Verma, 2016). The essential oil of tulsi is extracted by steam distillation from the leaves (Guenther, 1949 ; Simon et al.1990). Extracted essential oils have also been shown to contain biologically active constituents that are insecticidal (Chogo and Crank, 1981 ; Deshpande and Tipnis, 1997), nematicidal (Chatterjee et al. 1982), fungicidal (Reuveni et al. 1984) and antimicrobial properties (Yamasaki et al.1998 ; Wannissorn et al. 2005).

Article 2

Contribution of Ashtang Yoga in Enhancing the Emotional Comptence and Quality of Life of Young Adults

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Abstract

The purpose of the research was to evaluate the emotional comptence, effects of 12 weeks of daily practice (except Sunday and gazzeted holidays) ashtang yoga training .The hypothesis was that 12 weeks of ashtang yoga training would have positive effects on emotional comptence as supported by previous research. The participants included 80 adults from Govt. College, Bilaspur Rampur (U.P.). The subjects were ranging from 18-21 years of age. The subjects were divided into two equal groups consisting of forty subjects each belonging to one experimental and one control group. Participants in the group engaged in 1 hour of ashtang yoga training, daily practice (except Sunday and gazzeted holidays) over a 12 weeks of period, while the Control group not exposed to any kind of training.But control group under observation.Daily attendence taken from both the groups.

In order to analyse the data the present study,t-test has been used.Paired 't'-test was used to compare between post test and post test mean scores of experimental and control group and independent 't' test was used to compare between post test mean scores of experimental and control group.All of the statistical analysis test were computed at 0.05 level of significance. This study concludes that 12 weeks ashtang yoga training provide a sufficient stimulus to improve Psychological variable (emotional comptence) in untrained college adults.

Key Words: Ashtang Yoga, Emotional Comptence, Young Adults.

1. Introduction:

In the indian philosophical tradition one goal has been pursued throughout from the ancient to modern times and that is the liberation of the soul through perfection. The Indian tradition believes that it can be achieved through yoga. Yoga is an ancient discipline which aspires to bring balance and health to the physical, mental, emotional and spiritual dimensions of a human being. It has been a popular practice in India for long and now it is becoming increasingly common in the western societies. "Yoga" means union of our individual consciousness in a super-conscious state known as Samadhi. (P, 2012)

Ashtanga yoga:

This is the kind of yoga system that sage Patanjali describes in his book Yoga Sutra. The yoga sutras of Patanjali is the most important text of yoga in the Hindu philosophical tradition, it is often called "Raja yoga", "yoga of the kings", a term which is originally referred to the ultimate, royal goal of yoga, which is usually Samadhi, but was popularized by Vivekananda as the common name for Ashtanga yoga. (yoga sutras of Patanjali & Raja yoga, 2018).

EIGHT LIMBS OF ASHTANG YOGA

i. The five yamas [Ethical and moral restraints]: Ahimsa: non-violence and non-harming in any form to any living creature.This creates compassionate living, as true non-violence is astate of mind and heart.Satya: truthfulness in mind, word and action.This is considered to be the highest law of morality.Asteya: non-stealing, to free ourselves from possessiveness and envy.Brahmacharya: abstinence and the practice of moderation in all things.Aparigraha: non-greed in order to simplify life by adopting an attitude of generosity and non-hoarding.

ii. The five niyamas [Practices to create inner integrity]: Saucha: purit and cleanliness of-mind, body, heart and environment.Santosha: cultivation of inner contentment, in order not to hold others responsible for our happiness.Tapas: to glow and be illuminated with an inner aim and direction in life for growth.The great veg

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Article 3

SOFTLY-REGULAR SPACES IN TOPOLOGICAL SPACES

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Abstract: The aim of the present paper is to introduce two new classes of separation axioms (namely partly-regular and softly-regular spaces) in topological spaces which are weaker than regularity and lie between regularity and weakly-regularity. The relationships among strongly rg-regularity, regularity, soft-regularity, partly-regularity, almost regularity and weakly regularity are investigated. Some properties of softly regular spaces in the forms of subspace, product spaces and quotient spaces are obtained. Moreover, we obtained some characterizations of softly regular spaces with π-normality and quasi-normality.

1. Introduction

In 1937, Stone [11] introduced the notion of semi-regular spaces and obtained their characterizations. In 1958, Kuratowski [4] introduced a generalization of closed sets, called regularly-open and regularly-closed sets in general topology. In 1968, Zaitsev [14] introduced the concepts of π-open and π-closed sets and utilizing these sets, introduced the notion of quasi normal spaces and obtained their characterizations and preservation theorems. In 1969, Singal and Arya [7] introduced a new class of separation axiom (named almost-regular space) in topological spaces which is weaker than regularity but it is equivalent to semi-regular spaces due to Stone [11]. In 1973, Singal and Singal [10] introduced the notion of mildly normal spaces and obtained their characterizations. In 2008, Kalantan [3] introduced the notion of π-normal spaces and obtained their characterizations and preservation theorems. Recently, M. C. Sharma and Hamant Kumar [6] introduced the concept of softly-normal spaces and obtained their characterizations.

Key words: π-open and π-closed sets,softly-regular, partly-regular, almost-regular, weakly-regular, semi-regular, π-normal, quasi-normal and softly-normal spaces

2010 Mathematics subject classification: 54B05, 54B10, 54B15, 54D10

2. Preliminaries

Throughout this paper, spaces (X, τ), (Y, σ), and (Z, γ) always mean topological spaces on which no separation axioms are assumed unless explicitly stated. Let A be a subset of a space X. The closure of A and interior of A are denoted by Cl(A) and Int(A) respectively.

2.1 Definition. A subset A of a topological space (X, ℑ) is said to be **regularly-open** if it is the interior of its own closure, or equivalently, if it is the interior of some closed set or equivalently, A = Int(Cl(A)). A subset A is said to be **regularly-closed** if it is the closure of its own interior or, equivalently, if it is the closure of some open set or equivalently, A = Cl(Int(A)). Clearly, a set is regularly-open iff its complement is regularly-closed. The finite union of regularly open sets is said to be π**-open** [14]. The complement of a

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Article 4

L (δ*-OPEN, OPEN) MAPPINGS

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Abstract: By using δ*-open sets of Singal and Yadav [14], we introduce the concept of L (δ*-open, open) mappings, named as nomenclature of mappings mentioned in paper [5]. This new class of L (δ*-open, open) mappings is a super class of strongly continuous mappings of Levine [6] and a subclass of the class of strongly θ-continuous mappings of Noiri [11] as well as that of super continuous mappings of Munshi and Bassan [10]. L (δ*-open, open) mappings are shown as independent of strongly semicontinuous mappings due to yadav [16]. Various characterizations and some preservation properties of the new mappings are investigated.

Key words: δ-open, δ*-open sets, strongly continuous, strongly semicontinuous, L (δ*-open, open), super continuous and strongly θ-continuous mappings.
2010 Mathematics subject classification: 54C05, 54C08, 54C10.

1. Introduction

In 1960, Levine [6] introduced the concept of strongly continuous mappings in topological spaces and obtained their properties. In 1963, Levine [7] introduced the notion of semi-open sets as a generalization of open sets. In 1966, Velico [13] introduced the concepts of θ-open and δ-open sets and obtained their properties. In 1974, Arya and Gupta [1] introduced completely continuous mappings and obtained their characterizations. In 1980, by using θ-open sets, Noiri [11] introduced strongly θ-continuous mappings. In 1981, Jain [4] introduced the concepts of totally continuous mappings. In 1982, Munshi and Bassan [10] introduced the notion of super continuous mappings. In 1987, Singal and Yadav [14] introduced a weak form of δ-open set is called δ*-open set. In 1988, Yadav [16] introduced the notion of strongly semi-continuous mappings. In 1990, Popa [12] introduced the concept of almost feebly continuous functions and obtained their properties.

2. Preliminaries

A subset G of a space X is defined as δ-open [13] if for each x∈ G, there exists a regular open set H such that x ∈ H ⊂ G. Similarly, Singal and Yadav [14] defined G ⊂ X to be δ*-open if for each x ∈ G, there exists a clopen set H such that x ∈ H ⊂ G. A set A is δ*-closed (resp. δ-closed) iff X - A is δ*-open (resp. δ-open) and (δ*-clopen if it is both δ*-open and δ*-closed). The collection of all δ*-open sets in a space (X, ℑ), denoted by δ*-O(X, ℑ), is a topology ℑ* on X, called **O-dimensionalization** [14] of ℑ. They further showed that ℑ ≈ ℑ*

2018-19

Almost α*-Normal Spaces and gα*-Closed Sets

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Abstract: In this paper, we introduce, the notion of gα*-closed and rgα*-closed sets in topological spaces and investigate some of their properties. Further, utilizing gα*-closed and rgα*-closed sets, we obtain characterizations and preservation theorems for α*-normal, almost α*-normal and mildly α*-normal spaces.

1. Introduction

In 1965, Njastad [8] introduced the concept of α-open sets in topological spaces. In 1970, Levine [6] initiated the study of so called generalized closed (briefly g-closed) sets in order to extend many of the most important properties of closed sets to a large family. In 1970, Singal and Arya [10] introduced the concept of almost normal spaces. Various properties of new classes of topological spaces have been studied and the relations of these new concepts with the concepts of almost regularity have also been investigated. In 1973, Singal and Singal [11] introduced the notion of mildly normal spaces in topological spaces. In 1985, Jankovic [3] introduced the concept of rc-continuous functions. In 2000, Veera Kumar, M. K. R. S. [13] introduced the concept of g*-closed sets in topological spaces. In 2013, Balasubramanian [1] defined rg-normality, mildly rg-normality, continue the study of further properties of rg-normality and show that these three axioms are regular open hereditary.In 2016, M. C. Sharma and Hamant Kumar [9] introduced the concept of gg‡*-closed due to Kokilavani [5], and introduced the concept of almost g*ϲ-normal spaces and by using gg‡*-closed sets and obtained a characterization and preservation theorems for almost g*ϲ-normal spaces. In 2019, Jitendra Kumar and B. P. Singh [4] introduced the concept of gg*-closed sets due to Veera Kumar [13], and introduced the concept of almost g*-normal spaces and by using gg*-closed sets and obtained a characterization and preservation theorems for almost g*-normal spaces. Further show that this property is a topological property and it is a hereditary property only with respect to closed domain subspaces.

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MORE ABOUT L(δ*-OPEN, OPEN) MAPPINGS

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Abstract: In this paper, we further study some properties of L (δ*-open, open) mapping, using, δ*-convergence of nets and filters in a space. We study δ*-quotient topology, δ*-quotient space with some separation and covering axioms in connection to these mappings.
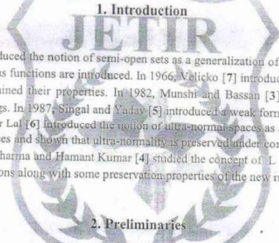
1. Introduction

In 1963, Levine [1] introduced the notion of semi-open sets as a generalization of open sets and using semi-open sets, semi-continuous functions as a generalization of open sets. In 1966, Velicko [7] introduced the concepts of θ-open and δ-open sets and obtained their properties. In 1982, Munshi and Bassan [3] introduced the concept of super continuous mappings. In 1987, Singal and Yadav [5] introduced a weak form of δ-open sets, called δ*-open sets. In 1990, Sundar Lal [6] introduced the notion of ultra-normal spaces as a generalization of normal spaces in topological spaces and shown that ultra-normality is preserved under continuous and clopen maps. Recently, Bhopal Singh Sharma and Hamant Kumar [4] studied the concept of L (δ*-open, open) mappings and various characterizations along with some preservation properties of the new mappings.

2. Preliminaries

A mapping f : X → Y is said to be **L(δ*-open, open)** mapping [1] if at each x ∈ X and to every open set M containing f(x), there exists a δ*-open set N containing x such that f(N) ⊂ M. Singal and Yadav [5] (resp. Velicko [7]) defined H ⊂ X to be **δ*-open** (resp. δ-open) if for each x ∈ H, there exists a clopen (resp. regular open) set G such that x ∈ G ∈ H. A set A is δ*-closed (resp. δ -closed) if X - A is δ*-open (resp. δ-open) and δ*-clopen (resp. δ-clopen) if it is both δ*-open (resp. δ-open) and δ*-closed (resp. δ-closed). The authors [5] showed that the collection of all δ*-open sets in a space (X, ℑ), denoted by δ*-O(X, ℑ) is a topology ℑ* on X, called **O-dimensionolization** of ℑ. They further showed T = T* iff the space (X, T) is O-dimensional space. A ⊂ X is said to be **semi-open** [1] (resp. feebly open [2]) if G ⊂ A ⊂ cl(G) (resp. G ⊂ A ⊂ s-cl(G), where s-cl denotes semi closure) for some open set G. A is **θ-open** [7] if for each x ∈ A, there exists an open set G such that x ∈ G ∈ cl(G) ⊂ A. The smallest δ*-closed set containing A is called δ*-closure of A, denoted by δ*-cl(A) and the largest δ*-open set in A is called δ*-interior of A , denoted by δ*-int(A).

स्वामी विवेकानन्द : हिन्दू धर्म पुर्नुद्धार विचार

डॉ. नीत बिहारी लाल *

स्वामी विवेकानन्द ने भारत में हिन्दू धर्म का पुनरूद्धार तथा विदेशों में सनातन सत्यों का प्रचार किया। इस कारण वे प्राच्य एवं पाश्चात्य देशों में सर्वत्र समाज रूप से श्रद्धा एवं सम्मान की दृष्टि से देखे जाते हैं।

स्वामी विवेकानन्द का जन्म 12 जनवरी 1863 ई. सोमवार, पौष कृष्ण सप्तमी तिथि के दिन प्रातःकाल सूर्योदय के किंचित काल बाद 6 बजकर 46 मिनट पर कलकत्ता के सिमलिंग मुहल्ले में अधिवक्ता विश्वनाथ दत्त और माता भुवनेश्वरी देवी की प्रथम पुत्र सन्तान के रूप में जो शिशु जन्म उसे देखकर, उस समय कौन सोच पाया होगा कि भविष्य में जन्म के मात्र 39 वर्ष 6 माह के जीवन में एक ऐसी आश्चर्य जनक प्रतिभा का ऐसी महान शक्ति का –विकास होगा, जिसका प्रभाव देशकाल की मर्यादा के भीतर सीमाबद्ध नहीं रहेगा।

ऐसी प्रतिभा जो भिन्न–भिन्न समय के भिन्न–भिन्न परिस्थितियों में पले नर–नारियों के प्राणों में मानव आत्मा की शाश्वत महिमा, सत्य न्याय मैत्री की सजीव प्रेरणा एवं निर्भय हो लोक कल्याण करने की स्फूर्ति जगाती रहेगी। यह कमनीय कान्ति देव शिशु जब धीरे–धीरे एक प्रिय दर्शन परन्तु तेजस्वी प्रतिभाशाली, शौर्य वीर्य–पराक्रम से पूर्ण एक नव युवक में परिणत हुआ, तब भी कोई सोच नहीं सका था कि यह नरेन्द्र नाथ दत्त, विश्व वरेण्य "स्वामी विवेकानन्द" बनेगा।

बालक नरेन्द्र साधक दुर्गाचरण के पौत्र थे और दुर्गाचरण कलकत्ता सुप्रीम कोर्ट के नामी वकील राममोहन दत्त के सुपुत्र थे। बालक नरेन्द्र के दो अन्य भाई महेन्द्र नाथ दत्त और भूपेन्द्र नाथ दत्त थे। स्वामी विवेकानन्द की बड़ी बहन का नाम स्वर्णमयी देवी था। इनके अतिरिक्त तीन बहनें थीं।

नरेन्द्र एक मधुर, प्रफुल्ल एवं चंचल बालक के रूप में बड़ा होने लगा। उसकी अदम्य शक्ति को वश में लाने के लिये दो नौकरानियों की आवश्यकता होती थी। नरेन्द्र एक नटखट एवं शरारती लड़का था जोप्रायः मचल उठता था। वह अपनी बहनों को परेशान किया करता और जब वे उसे पकड़ने दौड़ती तो वह खुली नाली में उतर पड़ता है और शैतानी से मुस्कराता तथा उनकी ओर मुँह बनाता क्योंकि वह जानता था कि वे उसे नाली में नहीं पकड़ेगी। उसे शान्त करने का अन्य कोई उपाय न देख, उसकी माँ "शिव–शिव", कहते हुए उसके सिर पर जल डालने लगती थीं। इससे वह हर बार शान्त हो जाता था। बाल्यावस्था में नरेन्द्रनाथ एक चंचल प्रकृति के विनोद प्रिय बालक थे। पर आध्यात्मिक विषयों के प्रति उसका अद्भुत आकर्षण था। राम–सीता, शिव आदि देव विग्रहों पर ध्यान केन्द्रित करने का खेल वे प्रायः खेला करते थे। माँ द्वारा सुनाई गई रामायण और महाभारत की कहानियों ने उन पर अभिन्न छाप डाली थी। साहस, परदुःख कातरता और भ्रमणशील सन्यासी जीवन के प्रति तीव्र आकर्षण उनका सहज स्वभाव था।

1876 ई. में नरेन्द्र ने कलकत्ते के प्रसीडेंसी कालेज में दाखिला लिया। फिर एक वर्ष बाद जनरल एसेम्बलीज इन्स्टीट्यूशन में दाखिला लिया। इसी कॉलेज के प्राचार्य तथा अंग्रेजी साहित्य के प्राध्यापक

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2018-19

SILKY NORMAL SPACES IN TOPOLOGICAL SPACES

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Abstract. The aim of this paper is to introduce and study a new class of normal spaces, called silky-normal spaces. Interrelation among some existing variants of normality is discussed and characterizations of these variants are obtained. We also proved that silk normality is a topological property and it is a hereditary property with respect to closed domain subspace. The decomposition of normality in terms of silky normality and some factorizations of normality in presence of some lower separation axioms are given.

1. Introduction

The notion of quasi normality as a weak form of normality was introduced by Zaitsev [25]. The concept of almost normality was introduced by Singal and Arya [17]. The notion of seminormal spaces were introduced by Vigilino [24]. The notion of mild normality was introduced by Shchepin [20] and Singal and Singal [18] independently. Lal and Rahman [14] further investigated quasi normal spaces and mildly normal spaces. In [14], they obtained several improvements of results due to Singal and Singal [18]. The concept of nearly normal space as a weak form of normal space was introduced by Mukherjee and Debray [15]. Dontchev and Noiri [6] introduced the notion of πg-closed sets. By using πg-closed sets, they obtained a new characterization of quasi normal spaces and use it to obtain some preservation theorems for quasi normal spaces. Arhangel'skii and Ludwig [2] introduced two new classes of normal spaces are called, α-normal spaces and β-normal spaces and obtained their characterizations. Kohli and Das [9] introduced the concepts of some new classes of normal spaces are called θ-normal, functionally θ-normal (briefly fθ-normal), weakly θ-normal (briefly wθ-normal) and weakly functionally θ-normal (briefly wfθ-normal) spaces and obtained their characterizations. π-normal topological spaces were introduced by Kalantan [8]. Das [3] introduced the concepts of some new classes of normal spaces are called Δ-normal, weakly Δ-normal (briefly wΔ-normal), and weakly functionally Δ-normal (briefly wfΔ-normal) spaces and obtained a relation with other weaker versions of normal spaces. Some variants of normality which lies between normal and mildly normal spaces are considered and interrelation among these variants of normality is established by Das [5]. Sharma and Kumar [19] introduced a new class of normal spaces is called, softly normal spaces in topological spaces and obtained some characterizations of softly normal spaces. Das and Bhat [4] discussed the interrelation among some existing variants of normality and obtained characterizations of these variants. Decomposition of normality in terms of near normality and some factorizations of normality in presence of some lower separation axioms are given. Kumar and Sharma [13] introduced two new concepts of separation axioms namely, softly regular spaces and partly regular spaces in topological spaces and obtained their characterizations with other separation axioms.

2. Preliminaries

Throughout this paper, spaces (X, ℑ), (Y, σ), and (Z, γ) (or simply X, Y and Z) always mean topological spaces on which no separation axioms are assumed unless explicitly stated. Let A be a subset of a space X. The closure of A and interior of A are denoted by cl(A) and int(A) respectively. A subset A is said to be **regular open** (resp. **regular closed**) if A = int(cl(A)) (resp. A = cl(int(A)). The finite union of regular open sets is said to be **π-open**. The complement of a π-open set is said to be **π-closed**. A point x is said to be **θ-limit point** [23] of A if closure of every neighbourhood containing x intersects A. A set θ-cl(A) is the **θ-closure** of A which contains all θ-limit points of A. A set A is **θ-closed** if A = θ-cl(A). The complement of a θ-closed set is said to be **θ-open**. A subset A is said to be **δ-open** set if it is the union of regular open sets. The complement of a δ-open set is said to be **δ-closed** (or A subset A is said to be δ-closed if A = δ-cl(A), where δ-cl(A) = {x ∈ X : int(cl(U)) ∩ A ≠ ∅, U ∈ ℑ and x ∈ U} and the complement of a δ-closed set is said to be **δ-open**).

2.1 Remark. For a subset of a space, we have following implications:

$$\text{regular open} \implies \text{π-open} \implies \text{δ-open} \implies \text{open}$$

Where none of the implications is reversible as shown by [6].

HUMAN AND SOCIAL DEVELOPMENT APPROACH IN PRESENT HIGHER EDUCATION SYSTEM IN INDIA

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Introduction :-

Education builds character, contributes to efficient human development. Improvement of human capital needs higher investments on social sector, which leads to higher growth of a Nation .

Our great Religion, culture, Ideology and great Religion books like Ved Purana and Ithihasa have laid great stress on education and have shown characters that contributed to the growth of the Nation. Lord Rama is a Great Example of reputed character and immense health, which made Him contribute a great deal for the rule of Rama Rajya – a perfect democracy linked to efficient development of the State . Even today His rule and His State. Ayodhya is a model being pursued through with the help of modern science and technology. Education has Played a positive role in human development .

Mahatma Gandhi ji very clearly and correctly wrote that education is the strong base for building a strong character social culture as well as strong India. He emphasized.

"basic education "to all, so that people can live a happy life living only in villages, avoiding migration to cities. Moreover he advised government to educate women who are the main pillars of society. Swami Vivekananda wanted to strong man (women also included) with strong mind and strong heath, so that India could become a strong and wealthy Nation in the world. He, in particular, wanted to promote women's education in the entire Nation. He advocates universities of education and health in India so that Nation can built with the efficient human resources. The core components of human development are: education and health .

Higher education, in India is gradually entering into crisis situation, facing many problems and inadequacies. Though its spread is quite rapid, its step decline in quality is equally rapid with scarcity of financial resources, proper infrastructure adequate qualified staff etc. though government is advised to allot nearly one percent of G.D.P. for higher education, government has settled at 0.8% in 2005-06 which may further Decline for want of sufficient resources. Whereas foreign countries

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β*g-normal spaces in topological spaces

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Abstract: The aim of this paper is to introduce and study a new class of spaces, called β*g-normal spaces. The relationships among s-normal spaces, p-normal spaces, α-normal spaces, β-normal spaces, γ-normal spaces and β*g-normal spaces are investigated. Moreover, we introduce the forms of generalized β*g-closed and β*g-generalized closed functions. We obtain characterizations of β*g-normal spaces, properties of the forms of generalized β*g-closed functions and preservation theorems.

Key Words: β-open, β*g-closed, gβ*g-closed and β*gg-closed sets; β*g-normal spaces; β*g-closed and β*g-gβ*g-closed functions.

2010 Mathematics Subject Classification: 54A05, 54C08, 54C10, 54D15.

1. Introduction

Normality is an important topological property and hence it is of significance both from intrinsic interest as well as from applications view point to obtain factorizations of normality in terms of weaker topological properties. In 1937, Stone [32] introduced the concept of regular-open sets. In 1963, Levine [16] introduced the notion of semi-open sets and obtained their properties. In 1965, Njastad [24] introduced the notion of α-open sets. In 1970, Levine [17] initiated the investigation of g-closed sets in topological spaces, since then many modifications of g-closed sets were defined and investigated by a large number of topologists. In 1978, Maheshwari [18] introduced the notion of s-normal spaces and obtained their characterizations. In 1982, Mashhour [23] introduced the notion of pre-open sets. In 1983, Abd El-Monsef [1] introduced the notion of β-open sets. In 1989, Nour [28] introduced the notion of pre-normal spaces and obtained their characterizations. In 1990, Arya and Nour [5] introduced the concepts of gs-closed sets. In 1990, Mahmoud [19] introduced the notion of β-normal spaces and obtained their characterizations. In 1995, Paul [29] further investigated p-normal spaces and obtained more characterizations. In 1996, Maki and et. al [20] introduced the concepts of gp-closed sets. In 1997, El-Atik [13] introduced the notion of γ-open sets. In 2002, by using gp-closed sets, Park [30] obtained some characterizations of p-normal spaces and defined pre gp-continuous functions. In 2007, Ekici [14] introduced a new class of normal spaces, namely γ-normal spaces, which is a generalizing of the classes of p-normal spaces and s-normal spaces. The relations among γ-normal, p-normal spaces and s-normal spaces and also properties of γ-normal spaces are investigated. In 2009, Benchalli [8] introduced the notion of α-normal spaces and obtained their characterizations.

2. Preliminaries

In what follows, spaces always mean topological spaces on which no separation axioms are assumed unless explicitly stated and $f : (X, \Im) \to (Y, \sigma)$ (or simply $f : X \to Y$) denotes a function f of a space $(X, \Im)$ into a space (Y, σ). Let A be a subset of a space X. The closure and the interior of A are denoted by cl(A) and int(A), respectively.

2.1 Definition: A subset A of a space X is said to be:

(1) **regular open** [32] if A = int(cl(A)).

(2) **semi-open** [16] if $A \subset cl(int(A))$.

(3) **pre-open** [23] or nearly open [13] if $A \subset int(cl(A))$.

(4) **α-open** [24] if $A \subset int(cl(int(A)))$.

स्वामी विवेकानन्द : हिन्दू धर्म पुर्नुद्धार विचार

डॉ. नीत बिहारी लाल *

स्वामी विवेकानन्द ने भारत में हिन्दू धर्म का पुनरूद्धार तथा विदेशों में सनातन सत्यों का प्रचार किया। इस कारण वे प्राच्य एवं पाश्चात्य देशों में सर्वत्र समाज रूप से श्रद्धा एवं सम्मान की दृष्टि से देखे जाते हैं।

स्वामी विवेकानन्द का जन्म 12 जनवरी 1863 ई. सोमवार, पौष कृष्ण सप्तमी तिथि के दिन प्रातःकाल सूर्योदय के किंचित काल बाद 6 बजकर 46 मिनट पर कलकत्ता के सिमलिया मुहल्ले में अधिवक्ता विश्वनाथ दत्त और माता भुवनेश्वरी देवी की प्रथम पुत्र सन्तान के रूप में जो शिशु जन्म उसे देखकर, उस समय कौन सोच पाया होगा कि भविष्य में जन्म के मात्र 39 वर्ष 6 माह के जीवन में एक ऐसी आश्चर्य जनक प्रतिभा का ऐसी महान शक्ति का –विकास होगा, जिसका प्रभाव देशकाल की मर्यादा में भीतर सीमाबद्ध नहीं रहेगा।

ऐसी प्रतिभा जो भिन्न–भिन्न समय के भिन्न–भिन्न परिस्थितियों में पले नर–नारियों के प्राणों में मानव आत्मा की शाश्वत महिमा, सत्य न्याय मैत्री की सजीव प्रेरणा एवं निर्भय हो लोक कल्याण करने की स्फूर्ति जगाती रहेगी। यह कमनीय कान्ति देव शिशु जब धीरे–धीरे एक प्रिय दर्शन परन्तु तेजस्वी प्रतिभाशाली, शौर्य वीर्य–पराक्रम से पूर्ण एक नव युवक में परिणत हुआ, तब भी कोई सोच नहीं सका था कि यह नरेन्द्र नाथ दत्त, विश्व वरेण्य "स्वामी विवेकानन्द" बनेगा।

बालक नरेन्द्र साधक दुर्गाचरण के पौत्र थे और दुर्गाचरण कलकत्ता सुप्रीम कोर्ट के नामी वकील राममोहन दत्त के सुपुत्र थे। बालक नरेन्द्र के दो अन्य भाई महेन्द्र नाथ दत्त और भूपेन्द्र नाथ दत्त थे। स्वामी विवेकानन्द की बड़ी बहन का नाम स्वर्णमयी देवी था। इनके अतिरिक्त तीन बहनें थीं।

नरेन्द्र एक मधुर, प्रफुल्ल एवं चंचल बालक के रूप में बड़ा होने लगा। उसकी अदम्य शक्ति को वश में लाने के लिये दो नौकरानियों की आवश्यकता होती थी। नरेन्द्र एक नटखट एवं शरारती लड़का था जोप्रायः मचल उठता था। वह अपनी बहनों को परेशान किया करता और जब वे उसे पकड़ने दौड़तीं तो वह खुली नाली में उतर पड़ता है और शैतानी से मुस्कराता तथा उनकी ओर मुँह बनाता क्योंकि वह जानता था कि वे उसे नाली में नहीं पकड़ेंगी। उसे शान्त करने का अन्य कोई उपाय न देख, उसकी माँ "शिव–शिव", कहते हुए उसके सिर पर जल डालने लगती थी। इससे वह हर बार शान्त हो जाता था। बाल्यावस्था में नरेन्द्रनाथ एक चंचल प्रकृति के विनोद प्रिय बालक थे। पर आध्यात्मिक विषयों के प्रति उसका अद्भुत आकर्षण था। राम–सीता, शिव आदि देव विग्रहों पर ध्यान केन्द्रित करने का खेल वे प्रायः खेला करते थे। माँ द्वारा सुनाई गई रामायण और महाभारत की कहानियों ने उन पर अभिन्न छाप डाली थी। साहस, परदुःख कातरता और भ्रमणशील सन्यासी जीवन के प्रति तीव्र आकर्षण उनका सहज स्वभाव था।

1876 ई. में नरेन्द्र ने कलकत्ते के प्रेसीडेंसी कालेज में दाखिला लिया। फिर एक वर्ष बाद जनरल एसेम्बलीज इन्स्टीट्यूशन में दाखिला लिया। इसी कॉलेज के प्राचार्य तथा अंग्रेजी साहित्य के प्रोध्यापक

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πggζ*-CLOSED SETS AND QUASI gζ*-NORMAL SPACES

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Abstract: In this paper, we introduce a new class of sets called πggζ*-closed sets in topological spaces. Also we study and investigate the relationship with other existing closed sets. Moreover, we introduce some functions such as gζ*-closed, πggζ*-closed, almost gζ*-closed, almost πggζ*-closed, πggζ*-continuous and almost πggζ*-continuous. We also study a new class of normal space called, quasi gζ*-normal space. The relationships among normal, π-normal, quasi normal, softly normal, mildly normal, α-normal, πα-normal, quasi α-normal, softly α-normal, mildly α-normal, gζ*-normal, πgζ*-normal, quasi gζ*-normal, softly gζ*-normal and mildly gζ*-normal spaces are investigated. Further we show that this property is a topological property and it is a hereditary property only with respect to closed domain subspaces. Utilizing πggζ*-closed sets and some functions, we obtained some characterizations and preservation theorems for quasi gζ*-normal spaces.

2010 AMS Subject classification : 54D15, 54D10, 54A05, 54C08.

Keywords : π open, gζ*-open, πggζ*-open, π-closed, gζ*-closed, and πggζ*-closed sets; πggζ*-closed, almost πggζ*-closed, πggζ*-continuous and almost πggζ*-continuous functions; quasi gζ*-normal spaces.

1. Introduction

In 1965, Njastad [13] introduced the concept of α-open sets in topological spaces. In 1968, the notion of quasi normal space was introduced by Zaitsev [21]. In 1970, Levine [11] initiated the study of so called generalized closed (briefly g-closed) sets in order to extend many of the most important properties of closed sets to a large family. In 1973, Singal and Singal [20] introduced the notion of mildly normal spaces in topological spaces. In 1990, Lal and Rahman [10] have further studied notions of quasi normal and mildly normal spaces. In 1994, H. Maki et al. [12] introduced the notion of αg-closed sets. In 2000, Dontchev and Noiri [4] introduced the notion of πg-closed sets and by using these sets, obtained a new characterization of quasi normal space. In 2001, A. V. Arhangel'skii and Ludwig [1] introduced the concepts of α-normal and β-normal spaces. In 2004, Nono et al. [15] introduced the notion of g#α-closed sets in topological spaces. In 2007, Aroekiarani and C. Janaki [2] introduced the notion of πgα-closed sets in topological spaces and by using πgα-closed sets, obtained a new characterization of quasi α-normal spaces. In 2008, Kalantan [6] introduced a weaker version of normality called π-normality and proved that π-normality is a property which lies between normality and almost normality. In 2009, R. Devi et al. [3] introduced the notion of *gα-closed sets in topological spaces. In 2013, Kokilavani [7] introduced the notion of gζ*-closed sets in topological spaces and investigated some of their properties. In 2015, T. C. K. Raman [16] introduced the concepts of πα-normal spaces. In 2018, Hamant Kumar [5] introduced some normal spaces such as gζ*-normal, πgζ*-normal, quasi gζ*-normal and mildly gζ*-normal, and the relationships among these normal spaces are investigated.

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STUDIES OF SOME SOIL HEALTH PARAMETERS OF DISTRICT BAREILLY, U.P. (INDIA)

Rajeev Kumar Yadav[1] and Nisha Verma[2]

ABSTRACT

To complete the life cycle of plants, organic matter as well as elements or nutrients are very essential. Soil constitutes are most important resource for agriculture. Besides climatic conditions, the texture and depth of the soil, nutrients, salinity and alkalinity, drainage go to determine the crop which would be suitable for an area. Physical characters of soil are related to the arrangement of particles and pores i.e. depth of top soil, porosity, water holding capacity, texture, crusting and aggregation. Each element is specific to plant and cannot replace by any other element. The deficiency of a particular element produces clear symptoms of disease which not appears in absence of any other element. This disease can be cured by the adding of that particular nutrient or element. The element is directly involved in nutrition of the plant. In present study all fifteen blocks of district bareilly has been surveyed from April to August 2018 and soil samples collected from every site and analyzed at U.P State regional soil and culture laboratory, Bilva, Bareilly. pH of all fifteen sites ranges between 6.5-7.8. Soil samples S3, S4, S5, S15 were alkaline and S9, S10, S11 slightly acidic. Organic carbon content was minimum in soil sample S14 and maximum in S9. Other samples from S1 to S15 show medium value. Estimation of phosphorus content ranged from 4.5-13.50 kg ha⁻¹. Amount of potash varied between 134-179 kg ha⁻¹ during this study. Higher value of organic sulphur was 15.70 ppm in S15. Medium value of zinc content reported from S3, S7, S8, S9 and rest low value of zinc. Soil samples S7, S14 were subsequently deficient and rich in iron. Soil of entire district was rich in mn content. Copper content in soil ranged from 0.13-0.88 ppm. Electrical value ranged from 0.4 – 0.8 S m⁻¹. Soil of Bareilly district shows imbalance of nutrients in some blocks. It can be reclaimed by adding required amount of particular type of nutrients and manage through control of use of chemical fertilizers in the soil. The use of organic manure in place of chemical fertilizers maintains the soil health and increase nitrogen concentration in the soil in different forms.

(Key words: Soil constituents, water holding capacity, texture)

INTRODUCTION

The District Bareilly forms a part of Rohilkhand division, is located in the north western part of U.P. and lies between latitude 280 01' and 280 54' north and longitude 780 5s' and 790 47' east. Its maximum length from north to south is about 96 Km and breadth from east to west is about 75 Km. For the administrative convenience the Bareilly district has been divided into six tehsils and fifteen blocks, which are Tahsil- Baheri (Blocks-Baheri, Damkhoda, Shergarh), Tahsil-Meerganj (Blocks- Meerganj, Fatehgarh West), Tahsil-Bareilly sadar (Blocks- Bhojipura, Kyara , Birthi Chainpur), Tahsil-Aonla (Blocks- Alampur Jafrabad, Ramnagar, Majhgawan), Tahsil- Nawabgan.j (Blocks-Nawabganj, Bhadpura), Tahsil-Faridpur (Blocks- Faridpur , Bhuta). According to the classification followed by the State spil survey organisation, the soil of the district can be classified into three major groups based on its texture and composition characteristics. Bareilly Type-1 (Tarai soils), Bareilly Type-2 (Khadar or low-land soils). Bareilly Type-3 (Upland or Bangar soils). These Soil constituents are most important resource for agriculture. Besides climatic conditions, the texture and depth of the soil, nutrients, salinity and alkalinity, drainage go to be suitable for an area. Physical characters of soil are related to the arrangement of particles and pores i.e. depth of top soil, porosity, water holding capacity, texture, crusting and aggregation. These characters show the limitations of root growth, seedling development and transfer of water within the soil particles. Various size of particles form mineral portion of soil and mineral component constitutes the soil mass. On the basis of size, the soil particles may be gravels, sands, silts and clays. Separation of soil particles below 2 mm in diameter is known as mechanical analysis. Soil particles as sand, silt and clay determine the physical properties of soil and cultivation.

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CUSCUTA REFLEXA : A PARASITIC MEDICINAL PLANT

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Abstract

Cuscuta reflexa is an extensive leafless, parasitic climber belong to the morning glory family Convolvulaceae. It is green and thread like twinning herb and tangled mass covering the host plant. It occurs throughout the India. It chlorophyll and cannot make its own food by photosynthesis. The plant is attached to various trees, shrubs, herbs a commercially valuable crops. Plant is completely dependent on host plant for their food and nutrition. C. reflexa vari colours of the flowers produced from white to pink. Seeds are produced in the large quantities. Seeds of C. reflexa has various survive in the soil for many years in the search of the appropriate host. It has 100-170 species. C. reflexa has various phytoconstituents including chemicals, flavonoids, carotenoids, the esters of higher aliphatic alcohol with the s fatty acids and carbon atoms. It is a parasite plant it sucks nutrient from the host plant for its growth and development its phytoconstituent also depends on the host plant. C. reflexa has been used from ancient times for various purpo as a purgative in the treatment of liver disorder, cough, itching, constipation, flutance, body pain, jaundice, gout, the urination disorders muscles pain, impotence, premature ejaculation, sperm leakage, ringing in the ear, lower back pa knees, leucorrhea, dry eyes, blurred vision and tired eyes. It exhibits anti inflammatory, antiviral, antibacterial, anticon antiseptic, analgesic, anesthetic, anti oxidant, antipyretic, bodycardia, antiserotolgenic, antiplasmodic, hemod nematicide, anti androgenic, hypocholestrolemic, antiandrogenic, hemolytic, diuretic, dermaligenic, immunosil antiarthritic, antiasthma and anticancer activities. C. reflexa is a parasitic weed plant and causes a huge loss to ti plants every year, still C. reflexa is called as miracle medicinal plant because many chemical compounds have been i from this plant having medicinal properties.

Key words : Cuscuta reflexa, parasitic herb, medicinal herb, ethenomedicinal value.

Introduction

Cuscuta reflexa is an extensive leafless, parasitic climber belong to the morning glory family Convolvulaceae (Story et al., 1958). It is yellowish green and thread like twinning herb and tangled mass covering the host plant. Cuscuta is found at the temperate and tropical region of the world with huge species diversity in tropical and sub tropical regions. It occurs throughout the India. This species is common over the northern region of country, Bengal plains, Western ghats, Celyon, Satarn region, Himachal Pradesh, Uttar Pradesh and Uttarakhand (Inamdar et al., 2011). It is also found in plain of Afganistan, Malaysia, Nepal and Thailand (Patel et al., 2012). In English, it is known as Dodder (Nandkarni, 2002). It is also known as Amarbel (Immortal twine), Akashwell (Skytwinner), Swarnlata, Akakhilata. Other names include Hellweed, Devilsgut, Begger weed, Stranglelare, Scald weed, Dodder of thyme, dodder Lesser dodder (Rai et al., 2016), Dev Witch's hair and love vine (Saini et al., 2015). It chlorophyll and cannot make its own fc photosynthesis. The plant is attached to variou shrubs, herbs and affect commercially valuabl (Kanade and Gham, 2010). It is parasite on a wide of plants including a number of agriculture and hos crop species. The common host plants are As hispida (Euphorbiaceae), Adathoda (Acanthaceae), Alstonia scholaris (Apocyn Annona squamosa (Annonaceae), Bougainv spectabilis (Nyctaginaceae), Calotropis g (Asclepiadaceae), Catharanthus (Apocynaceae), Clerodendron vis. (Verbenaceae), Campsis radicans (Bignonia Dalbergia sisso (Fabaceae), Dahelia s; (Asteraceae), Duranta plumieri (Verbena

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Medicinal As Well As Sacred Plants of Bilaspur Town, District Rampur (Uttar Pradesh)

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Abstract

In India, many religious festivals are celebrated by the people from Kashmir to Kanyakumari. All people celebrate religious festivals with scientific background and use one or several plants or plant parts in their ceremonies. The various parts of plants have been used as a source of medicine by man from ancient to modern era. The God has given some specific power to certain plants which play important role in prosperous human life. The present study was carried out among the plants of Bilaspur to identify the sacred as well as medicinally important plants. Bilaspur is a town in Rampur district, Uttar Pradesh. Total 22 plants belonging to 18 families were enumerated which are sacred as well as medicinally important. These are Aegle marmelos, Calotropis gigantea, Cannabis sativa, Catharanthus roseus, Curcuma longa, Cynodon dactylon, Datura stramonium, Ficus bengalensis, Ficus religiosa, Ficus virens Hibiscus rosa-sinensis, Justicia gendarussa, Mangifera indica, Melia azadirachta, Musa paradisiaca, Nelumbo nucifera, Nyctanthes arbor-tristis, Ocimum sanctum, Oryza sativa, Saraca asoca, Tegetes erecta and Thevetia peruviana.

Keywords: Traditional Plants, Religious Plants, Religious Beliefs, Sacred Plants, Sacred Rituals.

INTRODUCTION

India, many religious festivals are celebrated by the people. India is known for its diversity like religion, customs, myths, languages, culture etc. Most of the people celebrate religious festivals with scientific background and use one or several plants or plant parts in their ceremonies. The various parts of plants have been used as a source of medicine by man from ancient to modern era (Bisht and Badoni 2009, Mehra et al. 2014, Kumaran and Citarasu 2015, Truyen et al. 2015, Bajpai et al. 2016). The human culture, customs, religious rites, and myths, folk tales and folk songs, food as well as medicinal practices are deeply associated and influenced by the plants (Badoni and Badoni, 2001,

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Poisonous Plants : A Review

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Abstract

The world of floral diversity is amazing. India has rich and varied flora just like its culture. Plants are so amazing and beneficial for human being in every aspect. Without plants life is not possible on earth. Plant and flowers are also used for decoration of home as ornamental, some plants are poisonous in nature. Beautiful flowers and plants may have toxic properties. Inhabitant of rural area dependent on their forms and garden for foods may have poison. The term poisonous designates many kind of reactions or effects. The poisonous plant may be irritant, causing skin rashes, skin photosensitization causing allergic reaction. On the basis of causing internal poisoning, plant may be Cardiotoxic, Hepatotoxic, Neurotoxic and Cerebraltoxic. The substance responsible for mostly secondary metabolite or by product. Plant can differ by degree of toxicity and may be classify in to three different category Extremely, Moderately or Minimally. Poisonous nature of plant is due to the presents of Alkaloids Glycosides, Mineral, Oxalate, Photosensitizing compound ,toxic polypeptide or amine or resins. This paper listed the poisonous plants which are found in India. The poisonous plants are alphabetically arranged along with their botanical name, common name, family, toxins and alkaloids, poisonous parts and their toxic effects have been summarized. Many species of toxic plants has been reported from different plant families. Mostly the poisonous parts of toxic plants have been reported to be seeds, root, root bark, fruits, stem, stem bark, tubers, bulbs and sometimes whole plant.

Key Words – Poisonous plants, Toxic Chemicals, Toxins.

Introduction

The world of floral diversity is amazing. Plants are so amazing and beneficial for human being in every aspect. Without plants life is not possible on earth. Plant and flowers are also used for decoration of home as ornamental, some plants are poisonous in nature. Beautiful flowers and plants may have toxic properties. All types of native and introduced plants can be poisonous including ferns, herbaceous plants, woody shrubs, and trees. Lots of plants are poisonous or capable of causing highly allergic reactions. Symptoms of poisoning from plants can include, vomiting, stomach cramps, irregular heartbeat, burning to the mouth, lips or tongue, convulsions. The danger can range from mild irritation to severe illness or death. Poisonous content are concentrated only in certain plant parts, others are in entire plant parts. Few poisons are destroyed by cooking. Certain poisons disappear as the plant ages, some build-up as the plant ages. Many poisonous plants have such unpleasant taste. Some plant are not distasteful and can even be sweet, if eaten in large quantity can be cause serious problems for long the period. Adults have been poisoned by ingesting misidentified plants. Poisonous effect occurs according to age and health of human being. The term "poisonous" designates many kinds of reactions or effects. Among these effects are allergic reactions, irritations, skin rashes or dermatitis, skin photosensitization, and internal poisonings. On the basis of causing internal poisoning plant may be affect heart, liver, nerves and brain. The substance responsible for poisoning is mostly secondary metabolite or by product. Poisonous nature of plant may be due to the presents of Alkaloids, Glycosides, and Mineral, Oxalate, Photosensitizing compound, toxic polypeptide or amine or

11 Agrochemicals and Soil Degradation

Nisha Verma

India is an agricultural country. About seventy percent of our population depends on agriculture. One-third of our National income comes from agriculture. Our economy is based on agriculture. The development of agriculture has much to do with the economic welfare of our country. There are two main crop seasons, namely kharif (May-October) and rabi (October-April). The major kharif crops include paddy, sorghum, pearl millet, maize, cotton, sugar cane, soybean and groundnut, and the rabi crops are wheat, barley, gram, linseed, rapeseed and mustard. With its good range of climates and soils, India has a good potential for growing a wide range of horticultural crops such as fruits, vegetables, potato, tropical tuber crops, mushrooms, ornamental crops, medicinal and aromatic crops, spices and plantation crops. Food grain (cereals and pulses) crops dominant over all cultivation. The country has a diverse landscape and a climate varying from the areas with highest rainfall such as Mawsynram near Cherrapunji (Meghalaya) to the driest parts of western Rajasthan with negligible rain and from a hot and humid southern peninsula to the snow bound Himalayan Mountains. The climate of India has four seasons: winter (January-February), a hot summer (March-May), rainy

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International Journal of Scientific Research and Reviews

A Check List of Weed Plants from Bareilly College, Bareilly Campus, U.P, India

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ABSTRACT

Biodiversity of Bareilly district is very rich and also full of several types of medicinal, ornamental, timber yielding, road side woody as well as weed plants due to its situation on foot hills of Uttrakhand Himalayan region and the glory of district Bareilly College flourished with pretty ornamental plants, trees, shrubs and herbs but entire year, a rich flora of weed plants are also available to attention, therefore present study carried out for assessment of weed families and plants with their common names in the college campus in last months of year 2017 . On the basis of regular survey of campus, a check list of weed plants has been prepared and plants classified under herb, under shrub, under-tree, tree categories in this work. As far as possible the important samples of the weed plants and their specimens were collected from their natural condition. Every plant specimen has been pressed and processed for herbarium preparation and identified at the Department of Botany, Bareilly College with the help of authentic literature. In situ pictures and plant specimens of every reported weed collected and arranged at the deptt. of botany. Sixty five weed plants belonging to twenty three families have been studied for record their wide range.

KEYWORDS: weeds, flora, Botanical name

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πgb-NORMAL SPACES IN TOPOLOGICAL SPACES

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Abstract. The aim of this paper is to introduce a new class of normal spaces, called πgb-normal spaces by using πgb-closed and b-open sets. The relationships among πgp-normal, πgβ-normal, πgb-normal, p-normal, β-normal, γ-normal, π-normal, πp-normal, πγ-normal, πβ-normal, almost normal, almost p-normal, almost γ-normal, almost β-normal, quasi normal, quasi p-normal, quasi γ-normal, quasi β-normal, mildly normal, mildly p-normal, mildly γ-normal and mildly β-normal spaces are investigated. We also prove that πgb-normality is a topological property and it is a hereditary property with respect to π-open, πgb-closed subspaces. Further we obtain a characterization and some preservation theorems for πgb-normal spaces.

2010 AMS Subject classification: 54D10, 54D15, 54C08, 54C10.

Keywords: regular closed, π-closed, πgb-closed, and b-open sets; pre b-closed, π-continuous, πgb-continuous, π-irresolute, πgb-irresolute, and almost b-irresolute functions; πgb-normal spaces.

1. Introduction

In 1958, Kuratowski [14] introduced the concepts of regular open and regular closed sets in topological spaces. In 1968, Zaitsev [39] introduced the notion of quasi-normal spaces and obtained some characterizations and preservation theorems for quasi-normal spaces. In 1970, Levine [16] defined generalized closed sets in topological spaces. In 1970, Singal and Arya [32] introduced the notion of almost normal spaces and obtained their characterizations. In 1973, Singal and Singal [33] introduced the concept of mildly normal spaces and obtained their properties. In 1989, Nour [24] introduced the notion of p-normal spaces and obtained their characterizations and preservation theorems for p-normal spaces. In 1990, Mahmoud and Monsef [17] introduced the concept of β-normal spaces. In 2007, Ekici [8] introduced the concept of γ-normal spaces and obtained their characterizations and preservation theorems for γ-normal spaces. In 2008, Kalantan [9] introduced the notion of π-normal spaces and obtained some characterizations. In 2010, Tahiliani [35] introduced the notion of πgβ-closed sets and their properties are studied. In 2010, M. C. Sharma and Hamant Kumar [29] introduced the notion of πβ-normal spaces and obtained their characterizations. In 2012, Thabit and Kamaruhaili [36] introduced the notion of πp-normal spaces and obtained their characterizations. In 2012, Thabit and Kamaruhaili [37] introduced a weaker form of p-normality called quasi p-normality, which lies between πp-normality and mild p-normality. In 2013, Thanh and Thinh [38] introduced the notion of πgp-normal spaces and prove that πgp-normality is a topological property and it is a hereditary property with respect to π-open, πgp-closed subspaces. In 2015, M. C. Sharma and Hamant Kumar [31] introduced the concept of softly normal spaces and obtained their characterizations. In 2016, Hamant Kumar and M. C. Sharma [12] introduced the notions of almost γ-normal and πγ-normal spaces and obtained their characterizations. In 2016, Hamant Kumar and M. C.

Article 2 (top right)

2019-20

The Physiological Effect of Ashtang Yoga in Enhancing Quality of Life of Young Adults

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Abstract

This experimental study consists of pre test and post test. The experimental group underwent a training program for three months period, where as the control group attended general workout sessions. Both groups shall consist of forty subjects aged eight to 18 to 20 years.

1. Introduction

Article 3 (bottom right)

2019-20

पर्यावरणः बड़ी समस्या कारगर समाधान

डॉ0 अवतार दीक्षित (असि0 प्रो0 वाणिज्य)

राजकीय स्नातकोत्तर महाविद्यालय,

बिलासपुर (रामपुर)

कड़ाके की ठंड से जनजीवन बेहाल हुआ। जीवन का हर पहलू इसके प्रतिकूल असर से हलकान रहा। रिकॉर्ड टूटे। मौसम विभाग बताता है कि 119 साल पहले ऐसा जाड़ा पड़ा था। केवल सर्दी की बात नहीं है। गर्मी और बरसात के मौसम में भी ऐसे ही रिकॉर्ड टूटते हैं। कम समय में अधिकाधिक बारिश का और गर्मी में दिनोंदिन रिकॉर्ड तोड़ता पारा। इस हाड़ कंपाने वाली सर्दी की तमाम वजहों में से ग्लोबल वार्मिंग भी कारक माना गया। वैज्ञानिकों ने सिद्ध कर दिया है कि मौसम के सहज रूप-रंग में आई ये विकृति ग्लोबल के चलते ही है। वे इसका इलाज भी सुझाते हैं। तमाम उपायों में धरती को फिर से उसके गहने यानी हरियाली से आच्छादित करना इसका कुदरती कारगर समाधान है। साल 2020 की पूर्व संध्या पर इस दिशा में खुशखबरी भी मिली। पिछले दो साल में देश के वन क्षेत्र में पांच हजार वर्ग किमी की वृद्धि हुई है। देश का 21.67 फीसद हिस्सा हरियाली से आच्छादित हो चुका है। पेड़ों के तनों में कार्बन डाईऑक्साइड सोखने की अद्भुत क्षमता होती है। हरियाली के अभाव में यही कार्बन उत्सर्जन वायुमंडल में जाकर मौसम को गड़बड़ा रहा है। दुनिया के कई देशों में जंगल तेजी से काटे जा रहे हैं, भारत से इस आशय की खबर राहत देती है। जलवायु परिवर्तन को लेकर तय वैश्विक लक्ष्यों को हासिल करने में भारत हमेशा संजीदा रहा है। हमारी संस्कृति-सभ्यता प्रकृति को ईश्वर का दर्जा देती है। जलवायु परिवर्तन के मोर्चे पर दूसरे देशों के लिए भारत मिसाल बनता दिख रहा है। वे हमसे सीख सकते हैं कि अपनी परंपरा से प्रकृति और पर्यावरण कैसे बचाए जा सकते हैं। नया साल 2020 का पहला सप्ताह। ये संकल्प सप्ताह के नाम कि धरती की हरियाली को कम नहीं होने देंगे और इस साल कम से कम एक पौधा लगाकर पेड़ बनने तक उसकी देखभाल करेंगे।

Article 4 (bottom left)

2019-20

ii-regular Spaces in Topological Spaces

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Abstract: The aim of this paper is to introduce and study a new class of spaces, namely ii-regular spaces by using ii-open sets. The relationship among regular, strongly rg-regular, almost regular, softly regular, weakly regular, α-regular, s-regular and ii-regular spaces are investigated. Also we obtain some characterizations of ii-regular spaces, properties of the forms of gii-closed, iig-closed functions and preservation theorems for ii-regular spaces.

Key words: ii-open sets; ii-regular, s-regular, almost regular and softly regular spaces; gii-closed and ii-gii-closed functions.

2010 Mathematics Subject Classification: 54C10, 54D10.

1. Introduction

N. Levine [7] introduced the concept of semi-open sets in topological spaces. O. Njastad [10] introduced and studied the notion of α-open sets. M. K. Singal and S. P. Arya [12] introduced two new classes of regular spaces, namely almost regular and weakly regular. S. N. Maheshwari and R. Prasad [8] defined a new class of regular spaces called s-regular spaces. S. S. Benchalli [1] introduced and studied the notion of α-regular spaces. M. C. Sharma, P. Sharma and M. Singh [11] introduced a new class of regular spaces called ξ-regular spaces. Hamant Kumar [6] obtained some more characterizations and preservation theorems for ξ-regular spaces. Hamant Kumar and M. C. Sharma [3] introduced two new classes of separation axioms, namely softly regular and partly regular spaces which are weaker than regular spaces. Hamant Kumar [4] introduced some new types of separation axioms, namely ii-T₀, ii-T₁ and ii-T₂ etc. in topological spaces by using ii-open sets due to A. A. Mohammed and B. S. Abdullah [9]. Hamant Kumar [5] introduced two new classes of sets called gii-closed and iig-closed and by using these sets, obtained some characterizations of ii-normal spaces and properties of the forms of generalized ii-closed functions.

In this paper, we utilize ii-open sets to define and study a new class of spaces, called ii-regular spaces in topology. The relationships among regular, strongly rg-regular, almost regular, softly regular, weakly regular, α-regular, s-regular and ii-regular spaces are investigated. Also we obtain some characterizations and preservation theorems for ii-regular spaces.

2. Preliminaries

Throughout this paper, spaces (X, τ), (Y, σ), and (Z, γ) always mean topological spaces on which no separation axioms are assumed unless explicitly stated. Let A be a subset of a space X. The closure of A and interior of A are denoted by cl(A) and int(A) respectively.

2.1 Definition. A subset A of a space (X, τ) is said to be:
(1) **semi-open** [7] if $A \subset cl(int(A))$.
(2) **α-open** [10] if $A \subset int(cl(int(A)))$.
(3) **ii-open** [9] set if there exists an open set $G \in \Im$, such that
(i) $G \neq \phi, X$
(ii) $A \subset cl(A \cap G)$
(iii) $int(A) \subset G$.

2.2 Remark. We have the following implications for the properties of subsets:

open → α-open → s-open → ii-open

Ultrasonic Assessment of Refined and Unrefined Mustard Oils

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This paper presents an ultrasonic method to measure the physico-chemical properties of mustard oil. This oil has a distinctive pungent taste, characteristic of all plants in the mustard (*Brassicaceae*) family.[1] Over last decade less work has been done in evaluation of physico-chemical for a wide variety of mustard oil using ultrasonic technique. Ultrasound can be used to determine the dynamic rheology and composition of oils, the oil contents.[2] Mustard oil has been ultrasonically assessed because of it has an important implication in spread ability and consistency of fatty materials. Ultrasonic velocity and attenuation measurements have useful in investigations of structures of oils and interactions between the molecules.[3] The ultrasonic velocity (v), density (ñ), acoustic impedance (Z), adiabatic compressibility (β_{ad}), free length (L_f) have been measured at fixed frequencies, 3MHz, in mustard oils. Mustard oils have characterized for specific gravity, ash content, iodine value, acid value, saponification value, peroxide value, free fatty acid, and refractive indices using standard methods.[4] Low power ultrasound [LPU] in the food industry is as an analytical technique for providing information about the physicochemical properties of foods, such as composition, structure and physical state are responsible for changes in acoustical parameters.[5,6] Physical properties of edible oils depend primarily on composition and temperature. The influences of temperature on physical-chemical properties are analyzed so that the refined oils and other exotic varieties have arrived recently. Mustard oil is best when consumed in its raw form known as 'kachchi ghani'. "Our forebears have used mustard oil for centuries. A comparative study of different brands of mustard oil has shown in present paper.

Key words: Ultrasonic investigations, Mustard oil, Physico-chemical properties, Fatty acids

1. INTRODUCTION

Mustard oil has become an integral part of human diet in India. It is widely consumed in lipid source for everyday food product as they provide characteristic nutrition, flavor and textures to foods primarily in north and east India for centuries and therefore, an ultrasonic study in Mustard oil has been a subject of study of many research scientists. Less work has been made on the various thermo acoustic properties of mustard oil. The present study is an attempt to the study of intermolecular interactions in mustard oil using ultrasonic method. Though, many methods have been used in compositional study of fats and oils, but ultrasonic method provides a non-destructive, non-invasive and also a precise measurement technique.[7] During extraction, purification and usage oils undergoes a variety of processing operation. Behaviors of oils under real processing condition from molecular level have studied so that its purity, adulteration, shelf life may be detected. There are two important reasons of its parametric studies, firstly for nutritional value and secondly for bio fuel product. In this article its application for the characterization of oils assessed using ultrasound. Different physical and chemical parameters of mustard oil have been used to monitor the compositional quality of oils. These physic-chemical parameters include iodine value (IV), saponification value (SV), viscosity, density (ρ)and peroxide value (PV). The ultrasonic parameters are velocity (v), acoustic impedance (Z), adiabatic compressibility (β_{ad}), free length (L_f).[8,9]

2020-21

II-NORMAL SPACES IN TOPOLOGICAL SPACES

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Abstract. The aim of this paper is to introduce and study a new class of spaces, called ii-normal spaces. The relationships among β*g-normal, s-normal, α-normal, γ-normal and ii-normal spaces are investigated. Moreover, we introduce the forms of generalized ii-closed (briefly gii-closed) and ii-generalized closed (briefly iig-closed) functions. We obtain characterizations of ii-normal spaces, properties of the forms of generalized ii-closed functions and preservation theorems.

Key Words: ii-open, gii-closed and iig-closed sets; ii-normal, s-normal, α-normal and β*g-normal spaces; ii-closed and ii-gii-closed functions.

2010 Mathematics Subject Classification: 54A05, 54C08, 54C10, 54D15.

1. Introduction

Normality is an important topological property and hence it is of significance both from intrinsic interest as well as from applications view point to obtain factorizations of normality in terms of weaker topological properties. In 1937, Stone [21] introduced the concept of regular-open sets. In 1963, Levine [13] introduced the notion of semi-open sets and obtained their properties. In 1965, Njastad [19] introduced the notion of α-open sets and obtained their properties. In 1970, Levine [14] initiated the investigation of g-closed sets in topological spaces, since then many modifications of g-closed sets were defined and investigated by a large number of topologists. In 1978, Maheshwari [15] introduced the notion of s-normal spaces and obtained their characterizations. In 1983, Abd El-Monsef [1] introduced the notion of β-open sets. In 1987, Bhattacharyya and Lahiri [6] introduced the concepts of sg-closed sets. In 1990, Arya and Nour [3] introduced the concepts of gs-closed sets. In 1994, Maki et al [16] introduced the concepts of gα-closed and αg-closed sets. In 2007, Ekicii [8] introduced the notion of γ-normal spaces and obtained their characterizations. In 2008, Maki et al. [17] introduced the concepts s*g-closed sets and s*-normal spaces, and obtained their characterizations. In 2009, Benchalli [5] introduced the notion of α-normal spaces and obtained their characterizations. In 2015, Sharma and Hamant [20] introduced the concepts of β*g-closed sets and β*-normal spaces, and obtained their characterizations. In 2019, Hamant [11] introduced the concept of β*g-normal spaces, and obtained their characterizations. In 2019, Mohammed and Abdullah [2] introduced the concepts of ii-open sets and obtained their properties. In 2019, Hamant [10] introduced the concepts of ii-separation axioms and ii-closed functions.

2. Preliminaries

In what follows, spaces always mean topological spaces on which no separation axioms are assumed unless explicitly stated and f : (X, ℑ) → (Y, σ) (or simply f : X → Y) denotes a function f of a space (X, ℑ) into a space (Y, σ). Let A be a subset of a space X. The closure and the interior of A are denoted by cl(A) and int(A), respectively.

2.1 Definition. A subset A of a space X is said to be:

(1) **regular open** [21] if A = int(cl(A)).

(2) **semi-open** [13] if A ⊂ cl(int(A)).

(3) **α-open** [19] if A ⊂ int(cl(int(A))).

A METHOD ON THE FALSE DISCOVERY DISTRIBUTION FOR CONTROLLING QUANTITIES

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ABSTRACT

In this paper, we have proposed a confidence envelope for false discovery control, when testing multiple hypothesis, we develop a method for finding p-value distribution. We construct a confidence envelope for the whole False Discovery Proportion processes. In these envelopes we drive confidence thresholding for controlling the quantities of the distribution of False Discovery Proportion as well as controlling the number of false discovering. We also investigate method for estimating the p-value distribution.

KEYWORDS: FDR, P-value distribution, FNP, BH method

I. INTRODUCTION

Among the many challenges raised by the analysis of large data sets is the problem of multiple testing. In some settings it is not unusual to test thousands or even millions of hypotheses. Examples include function magnetic resonance imaging microarray analysis in genetics and source detection in astronomy. Traditional methods that provide strong control of familywise error. Often have low power and can be unduly conservative in many applications. Benjamine and Hochberg pioneered is alternative. Define the false discovery proportion (FDP) to be the number of false rejections decides by the number of rejections. The false discovery rate (FDR) in the expected FDR. It provided a distribution free finite sample method for choosing a p-value threshold that guarantees that the FDR is less than a target level α. The same paper demonstrated that the Benjamine and Hochberg procedure is often more powerful than traditional method that control family wise error. Recently there has been much further work on FDR we shall not attempt a complete review here but mention the following Benjamine and Yekuteeli extended the BH method to a class of dependent tests. Bayesien proposed a new FDR method which has higher power than the original BH method.

In this paper we can be extended to the sparse regime where the fraction of alternative tends to zero, we develop some large theory for FDR's and presents new method for controlling quantities of the false discovery. An essential idea is to view the proportion of the false discovery as a stochastic process indicate by the p-value threshold. The problem of choosing a threshold then becomes a problem of controlling a stochastic process. Although this stochastic process is not observable, we will show that it is amenable to inference.

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पर्यटन की दृष्टि से ओरछा का ऐतिहासिक धरोहर के रूप में सांस्कृतिक महत्व

डॉ० नीत बिहारी लाल *

ओरछा भारत के हृदय स्थल बुन्देलखण्ड क्षेत्र में आता है। यद्यपि ओरछा मध्यप्रदेश के टीकमगढ़ जिले में स्थित है परन्तु झाँसी से 19 कि.मी. दक्षिण पूर्व दिशा में बेतवा नदी के दाहिने किनारे पर स्थित है। ओरछा के उत्तर में जिला शिवपुरी तथा पश्चिम उत्तर प्रदेश के ललितपुर तथा पूर्व में झाँसी की सीमाएं छूती हैं। ओरछा के भू-भाग में लगभग समान प्रकार का सांस्कृतिक परिवेश देखने को मिलता है, इस क्षेत्र के निवासियों में भाषा, कला व संस्कृति का एक सूत्र प्रतीत होता है। बुन्देलखण्ड का अधिकतर विस्तार स्वीकार करने वाले प्रायः इसे उत्तर में जमुना, दक्षिण में नर्मदा, पूर्व में टौंसा तथा पश्चिम में चम्बल से आवृत मानते हैं। यह भाग उत्तरी अक्षांश 230 – 45' तथा 260 – 50' और पूर्व देशान्तर 770 – 52' तथा 820 के मध्य स्थित है।20

इस भूभाग का नाम बुन्देलखण्ड लगभग 15वीं शताब्दी ई0 में पड़ा माना जाता है।1 प्राचीनकाल में ओरछा क्षेत्र चेदि राज्य के अन्तर्गत आता था।2 बुन्देलखण्ड क्षेत्र में ओरछा की सीमा निर्धारण के विषय में एक महत्वपूर्ण लोकोक्ति प्रचलित है।3 इस लोकोक्ति के अनुसार होशंगाबाद सागर तथा नर्मदा तक का भाग बुन्देलखण्ड में सम्मिलित था।

भौगोलिक विशेषताओं की दृष्टि से ओरछा की प्रकृति बहुत ही विविधतापूर्ण है। ओरछा की जलवायु अति उष्ण तथा शीत है। प्रतिकूल जलवायु के कारण इस क्षेत्र में मानसून सामान्य ही रहता है तथा कभी–कभी सामान्य से अधिक वर्षा भी होती है। पथरीली मिट्टी होने के बावजूद यहां पर चावल गेहूँ, कपास, दाल तथा तिलहन यहां की प्रमुखता से होते हैं।

बेतवा नदी के किनारे बुन्देला शासक रुद्र प्रताप द्वारा 16वीं शताब्दी में स्थापित नगर ओरछा पर्यटन एवं सांस्कृतिक क्षेत्र के अतिरिक्त धार्मिक महत्व का स्थान भी है। जहां ओरछा में ऐतिहासिक महत्व के स्मारक हैं, वहीं ओरछा के मन्दिर भी पर्यटन के धार्मिक महत्व को बढ़ाते हैं। पर्यटन की दृष्टि से ओरछा अत्यन्त महत्वपूर्ण स्थल है।

ओरछा के पर्यटन स्थलों में जहांगीर महल, राजमहल, रायप्रवीण महल, लक्ष्मी नारायण मन्दिर, चतुर्भुज मन्दिर, ओरछा शासकों की छत्रियां, दीवान हरदौल का चबूतरा व शहीद स्मारक राज्य शासन के संरक्षण में हैं।1 हनुमान मन्दिर व ओरछा मन्दिर के संरक्षण की व्यवस्था एक न्यास के पास है।2 सुन्दर महल का पुरावशेष ही रह गये हैं।

16वीं शताब्दी में बुन्देला शासकों द्वारा स्थापित ओरछा नगर ऐतिहासिक एवं धार्मिक स्थलों के अतिरिक्त नैसर्गिक सौन्दर्य के लिए भी महत्वपूर्ण है। यहां की बेतवा नदी का किनारा एक विशिष्ट सौन्दर्य लिए है। यहां पर आकर पर्यटकों का मन प्राकृतिक सौन्दर्य तथा ऐतिहासिक एवं धार्मिक स्थलों

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ON WEAKLY Δ-NORMAL SPACES IN TOPOLOGICAL SPACES

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Abstract. The aim of this paper is to study the class of weakly Δ-normal spaces. The relationships among Δ-normal, wfΔ-normal, wΔ-normal, π-normal, softly normal, silky normal, quasi normal, almost normal, nearly normal, ii-normal, s-normal, α-normal, γ-normal and mildly normal spaces are investigated. Moreover, we introduce the forms of some generalized functions such as almost gδ-closed and almost gδ-continuous functions. We obtain some characterizations and preservation theorems of weakly Δ-normal spaces in the forms of almost generalized δ-closed and almost generalized δ-continuous functions.

Key words and phrases: δ-closed sets; weakly Δ-normal, silky normal, quasi normal, softly normal and ii-normal spaces.

2010 AMS Subject classification: 54A05, 54C08, 54C10, 54D15.

1. Introduction

In 1968, the notion of quasi normality is a weaker form of normality was introduced by Zaitsev [28]. In 1970, the concept of almost normality was introduced by Singal and Arya [24]. In 1973, the notion of mild normality was introduced by Shchepin [22] and Singal and Singal [25] independently. In 1978, Maheshwari and Prasad [15] introduced a new class of normal spaces is called s-normal spaces in topological spaces and obtained their characterizations. In 1990, Lal and Rahman [13] further investigated the notions of quasi normal and mildly normal spaces. In 1998, the concept of nearly normal space is a weaker form of normal space was introduced by Mukherjee and Debray [17]. In 2000, Dontchev and Noiri [6] introduced the notion of ng-closed sets and by using these sets, obtained a new characterization of quasi normal space. In 2007, Ekici [8] introduced the concept of γ-normal spaces in topological spaces and obtained their properties. In 2008, π-normal topological spaces were introduced by Kalantan [10]. In 2009, Benchalli and Patil [3] introduced a new class of normal spaces is called α-normal spaces in topological spaces and obtained their characterizations. In 2009, Das [5] introduced the concepts of some new classes of normal spaces are called Δ-normal, weakly Δ-normal (briefly wΔ-normal), and weakly functionally Δ-normal (briefly wfΔ-normal) spaces and obtained a relation with other weaker versions of normal spaces. Some variants of normality which lies between normal and mildly normal spaces are considered and interrelation among these variants of normality is established by Das [5]. In 2015, Sharma and Kumar [21] introduced a new class of normal spaces is called softly normal spaces in topological spaces and obtained their characterizations. In 2019, Kumar [11] introduced the concept of silky normal spaces in topological spaces and obtained their characterizations. Recently, Kumar [12] introduced a new class of normal spaces is called ii-normal spaces in topological spaces and obtained their characterizations.

2. Preliminaries

Throughout this paper, spaces (X, ℑ), (Y, σ), and (Z, γ) (or simply X, Y and Z) always mean topological spaces on which no separation axioms are assumed unless explicitly stated. Let A be a subset of a space X. The closure of A and interior of A are denoted by cl(A) and int(A) respectively. A subset A is said to be **regular open** (resp. **regular closed**) if A = int(cl(A)) (resp. A = cl(int(A)). The family of regular open (resp. regular closed) sets of a space X is denoted by RO(X) (resp. RC(X)). The finite union of regular open sets is said to be π-open [28]. The complement of a π-open set is said to be **π-closed**. A subset A is said to be **δ-open** [27] set if it is the union of regular open sets. The complement of a δ-open set is said to be **δ-closed** (or A subset A is said to be δ-closed

2019-20
2020-21

कोविड–19 एक वैश्विक महामारी : चुनौतिया एवं अवसर

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शोध सारांश

वायरस यानी जहर। लैटिन भाषा में इस शब्द के यही मायने है। ये सूक्ष्म विषाणु जीवित कोशिकाओं में पहुंचकर अपनी संख्या आश्चर्यजनक रूप से बढ़ाकर उन्हें संक्रमित कर देते हैं। 1892 में रूसी वनस्पति शास्त्री दमित्री इवनोवास्की द्वारा लेख में एक ऐसे गैर बैक्टीरिया पैथोजेन का जिक्र करने और 1898 में डच माइक्रोबायलोजिस्ट मार्टिनस बीजरिनक द्वारा टोबैको मोजैक वायरस का पता लगाने के बाद पर्यावरण में मौजूद लाखों वायरसों में से पांच हजार के बारे में व्यापक जानकारी पता की जा चुकी है। इन्ही वायरसों में से एक कोरोना वायरस एकदम नया है। इसकी रोकथाम के लिए शारीरिक दूरी को एक मात्र रामबाण इलाज बताया जा रहा है। जो लोग इस नियम की अवहेलना कर रहे हैं वे इंसान की खाल में समाज के लिए किसी किसी वायरस से भी ज्यादा खतरनाक हैं। कोरोना के बढ़ते प्रकोप के बीच भारत में देशव्यापी लाकडाउन घोषित किया। विशेषज्ञों का अनुमान था कि 21 दिन के लॉकडाउन में संक्रमण काबू में आ जायेगा। इस दौरान आये अधिसंख्य मामलों में या तो ट्रेवल हिस्ट्री निकली या वे किसी संक्रमित के सीधे संपर्क में रहे। सामुदायिक संक्रमण की बात नहीं आई।

इतिहास साक्षी है। महामारियाँ जब भी आई हैं मुश्किलें लाई हैं। इन चुनौतियों के बीच इंसानी जीवन को उन्होंने और अधिक व्यवस्थित करने का काम

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Abstract: Mustard oil is very useful for our daily life cooking, medicines and in other useful areas mustard oil has perfect physico-chemical properties for health. It has perfect composition of saturated and unsaturated fatty acids. These acids balance the cholesterol level mustard oil is widely consumed in India. For centuries but sometimes in market it adulated. So this paper focuses the study of ultrasonic velocity at different frequencies in different samples. Ultrasonic technology is a powerful technology over other traditional techniques. It is more inexpensive and capable to check more rapidly and precise measurements. In the present paper, velocity of ultrasound was measured in pure and branded samples of mustard oil at the frequencies 1, 2,3,4,5 MHz frequencies using ultrasonic multi frequency interferometer at temperature. The present study helps to understand the purity of these samples and present data will be useful to identity the adulteration in oils.

Keywords: Ultrasonic velocity, mustard oil, Frequency, Physico-chemical, Temperature.

I. Introduction

Different type's oils are very used in our life. The physico-chemical and dynamic properties of oils depend upon their applications. Vegetables oils have very important role in human diet. Among different vegetables oils mustard oil is very useful for human diet. Oils are composed of triglycerides. Mustard oil is used for cooking and also for medicines [1]. The mustard oil is good for heart disease due to its unique composition of monosaturated fatty acid, erucic along with other mono and polysaturated fatty acids. Mustard oil is used as antibacterial, antifungal properties, which is used for many medicinal utilities [2]. Different varieties of techniques are used to detect the adulteration of mustard oil like X-Ray diffraction, density, refraction measurements (RI), Nuclear magnetic resonance (NMR), Neutron scattering and differentia scanning calorimetry DSC ultrasonic techniques is used as an alternate means of characterization of oils over other techniques used conventionally [3]. Ultrasonic technique is better than other techniques because it is more economic, efficient, convenient and capable to check the sample more rapidly. It is nondestructive and noninvasive [4]. Ultrasonic velocity study in different samples of mustard oil were carried out by several researchers and scientists to check the physico-chemical properties of oils ultrasonic studies have attracted the attention of number of scientists due to its beneficial use ultrasonic technology used in phase transition [5]. Fluoresence spectroscopy technique is used to study the refined and unrefined vegetable oil. Ultrasonic velocity was measured in healthy and infected area of oil and it is observed the ultrasonic velocity of infected area is lower than healthy area. Variation of ultrasonic velocity and absorption with temperature and frequency in high viscous vegetable oil were measured and it is observed that ultrasonic velocity of vegetable oils decreases with the increase of temperature.
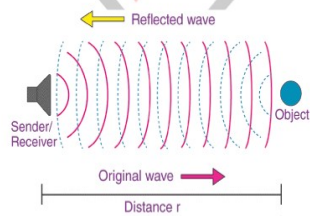

Fig 1- Ultrasound Waves

Ultrasound Technology in Milk Product: A Review

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Abstract: Ultrasound is a mechanical wave that is oscillating at a frequency above that of human hearing. Ultrasonic waves have any frequency above 20 KHz up to a practical limit of around 10MHz for various applications. Within this range the measurement of the speed of propagation and the attenuation reflection of ultrasonic signals can be the basis of tool systems for the dairy and milk industry. Using ultrasound technology in the milk and dairy and make the milk. It is very complicated process in second or minutes with high productivity, in minimum time and more production of milk is very complicated process. Minimizing the cost and steps, simplifying manipulation and proceed-up giving more purity of final product, in this review paper to reduce the waste water from the milk and take only a fraction of the time and energy normally needed for conventional process. Several such as freezing, cutting drying, tempering bleaching, sterilization, and extraction have been applied efficiently in the milk in the product. Using the ultrasound wave in the food processing to increase the purity of food, milk, also increase the rate of mixing or micro mixing. This is an advantage of ultrasound wave. To use the ultrasound, faster energy and mass transfer, reduce thermal and concentration, gradients, reduce temperature, selective extraction; reduce equipment size, faster response to process extraction control, increased production and elimination of process steps.

Keywords: Ultrasonic waves, Processing, Treatment, Dairy Product, Parameters.

I. Introduction

The customer demand, the preservation of the milk in the form of best quality. Therefore non thermal milk processing and preservation are crucial one of the current and important methods of non-thermal milk processing and preservation is application of ultrasound wave. Hearing capacity of man is 20Hz, these types of sound wave called infrasonic wave. The above frequency range called as ultrasonic wave. Ultrasound techniques are used in milk and dairy industry. The ultrasound wave also save the some important enzyme, bacteria, despite the fact that investigation is not yet complicated, ultrasonic techniques are relatively cheap simple and energy saving and thus become in emerging technology for probing and modifying dairy products milk is a major source of essential nutrients for adults and children in India. In this paper, the results obtained that this types of milk is very useful for children as comparison to other milk. And also the result obtained in ultrasonic parameters such as velocity, attenuation, compressibility acoustic impedances, bulk modules intermolecular free length specific heat capacity and thermal conductivity are calculated for different samples of milk to analyze the quality and adulteration. The ultrasonic techniques have been implemented is non-invasive on line measuring system. In the view of this an attempt has been made to study ultrasonic parameters of different milk samples in order to check the purity of milk.

Fig 1 – Ultrasonic continuous wave generator

ADVANCE TREATMENT OF FOOD STUFF BY ULTRASOUND: A REVIEW

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Abstract: Ultrasound is non-thermal food processing techniques. The sound wave having frequency greater than 20 KHz referred as ultrasonic wave. Ultrasonic vibrations can be produced or passed throw in any sort of material gaseous, liquid and solid. Ultrasound is broadly classified into two groups as low power ultrasound and high power ultrasound, low power ultrasound having frequencies higher than 100 KHz and Intensities below 1 W/cm². LPU case no physical or chemical alterations in properties of material through which the wave passes high power ultrasound (HPU) uses frequencies between 18 KHz to 100 KHz and intensities higher than 1 W/cm² (Generally 10-100 w/cm²) HPU is capable of altering material properties (e.g. physical and chemical and structural) when ultrasonic wave travel through medium, sound is transmitted as sinusoidal wave and energy is propagated throughout the system. These vibrations are composed of cycles of compression and expansion moving in the media particles. When the energy reaches an optimum level an increase of pressure take place in that medium. This increase generates thousands of bubbles. Cavitation can be transient or stable, a difference that depends on the size of bubbles produced during cavitation and the speed of bubble growth. Cavitation is responsible for all disruption breakdowns of microstructures and production of free radicals in the medium etc. Cavitation creates region of very high temperature (5500°c) and peaks of pressure 50 k Pascal. Ultrasound is one of the important technologies that were developed to minimize processing steps and maximize quality and ensure the hygienic quality of food products, so ultrasound is widely used in food processing technology in preservation and extraction steps. It makes use of physical and chemical phenomenon which is very different with conventional techniques. It offers great advantages in various fields like productivity, yield better quality, less time consuming and ecofriendly. It is also include none effective mixing and micro mixing faster energy and mass transfer reduce thermal and concentration gradients reduced temperature, selective extraction reduce equipment size, faster response in processing, extraction control large production and less time consuming.

Index Terms: Ultrasonic wave, food stuff, processing, cavitation, and sonication.

I. Introduction

The sound waves which have the recurrence over the restriction of human discernibility., i.e. more noteworthy than 20 KHz alluded to an ultrasonic wave. The upper recurrence limit isn't unequivocal since it is consistently expanding as new strategies are found. Ultrasonic vibrations can be created in any kind of material as vaporous, fluid and strong. Ultrasound is one of the arising technologies that were created to limit handling time cost of preparing expand quality and guarantee the wellbeing of food items (artisan et al , 2011).Ultrasound innovation has shown significant advances in food preparing over the most recent couple of years. This no warm innovation, applied at low recurrence (Power ultrasound) in mix with heat, has been utilized effectively to inactivate the microbes in various fluid food varieties and fulfilling current purification guidelines. The primary justification this current innovation's viability depends on the cavitation produced by ultrasound in food from sound waves going through the medium which thusly upset the cell layers. At present ultrasound is another innovation that has been investigated in the lab with victories , yet it is as yet a work in progress ebb and flow research is empowering and has a promising future. A couple of business applications have utilized force ultrasound to perform homogenization, cutting extraction, inactivation of chemicals and microorganisms in the handling of food and bioproducts (Feng and Yang et al, 2005). The utilization of ultrasound in mix with heat permits diminishing the preparing time and has the capability of energy and financial reserve funds. Ultrasound hardware is not difficult to work in lab and ecofriendly for handling food items. Ultrasonic procedures utilized with food items structure a whole field of uses and give the client a wide assortment of data about the properties of materials being handled (strong, fluid or gase) (Povey, 1998).

II. Historical Background

Ultrasound has been utilized for an assortment of purposes that incorporates regions as various as correspondence with creatures, the location of streams in substantial structures the union of fine synthetic compounds and treatment of sickness almost 80 years prior chamber (1937) revealed that unadulterated pensin was inactivated by sonication most likely because of cavitation. Improvement in the utilization of ultrasound started in the years going before the subsequent universal conflict by the 1960 s the modern employments of force ultrasound were acknowledged . The chance of utilizing low force ultrasound to portray food sources was first acknowledged more than 60 years prior. In any case it is as of late that the maximum capacity of the strategy has been figured it out.

STUDIES OF PROPAGATION OF ULTRASONIC WAVES IN MUSTARD OIL : A REVIEW

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ABSTRACT

Mustard oil is very useful for our daily life in cooking which provide energy, essential fatty acids, and vitamins. It is heart friendly fatty acid and calorie free oil, low in saturated fats and high in mono saturated. It has high smoking point. So these types of oil are best for cooking as compare to other cooking oil. Mustard oil is a good combination of saturated and unsaturated carboxylic acid. Cholesterol level controlled by saturated and unsaturated acids present in mustard oil by increasing good HDL (High density lipoprotein) and deceasing LDL (Low density protein). Thus mustard oil helps to minimize the risk of cardiovascular diseases, heart attack or stroke. Ultrasonic waves are sound waves which have frequency higher than 20,000 hertz. And these types of waves have more frequency range as human hearing capacity. These waves are used in different fields like for cleaning, mixing, sonochemistry, welding and also used for characterizing the edible oils. Different techniques are used for the checking of adult rational of edible oils and for characterization of edible oils. But ultrasonic study has more advantages over other traditional techniques used in this field. Ultrasonic technique is nondestructive and noninvasive, capable of rapid and precise measurement. It is less expensive than other techniques. The aim of this review paper is study of physico-chemical properties and application of mustard oil. When using the ultrasonic waves, mustard oil has particular specific gravity, PH, ash content, iodine value, acid value, sporification value, peroxide value, cholesterol free acid, flash point, viscosity, and refractive indices using standard methods.

Keywords: Mustard oil, Ultrasonic waves, Physico-chemical properties, fatty acid, experimental review.

I.   INTRODUCTION

The ultrasonic technology is a technique for the characterization of mustard oil. The ultrasonic technology is very cost-effectively, Appropriate, Malleable methodology for oil characterization in comparison to predictable method. The studies of ultrasonic in oil and liquid are very useful in understanding the nature and the strength and also physico-chemical properties mustard oil, used a traditional edible oil in most part of India for centuries is well known its utilities. The ultrasonic technology is one versatile technology that has displayed potential for processing and edible oils.
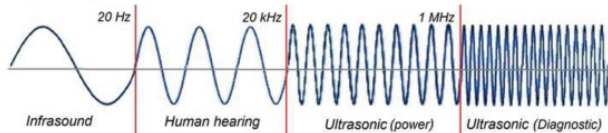

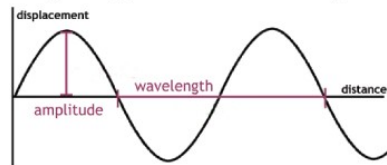**Figure 1:** Application of Ultrasonic Technology

Figure2: Ultrasonic waves.