



K. K. Wagh Education Society's

K. K. Wagh Agricultural Faculties

240/1, Saraswatinagar, Panchavati, Nashik 422 003. (Mah.)

Ph. : (0253) 2303104, 2303545, 2303668, 2303507, 2303103, 2303939

Fax : (0253) 2303103, 2303545, 2303668, 2303507

Website : www.kkwagh.edu.in/agri

1. Visits of Dignitaries



Dr. K. P. Vishwanath, Vice Chancellor, MPKV, Rahuri, Dr. P. A. Turbhatmat, Associate Dean, Dr. A. S. College of Agril. Engineering and Shri Sopan Kasar,

Registrar, MPKV, Rahuri visited Saraswati Nagar Campus as well as K.K.Wagh Education Society's office on 14th March, 2016.



Dr. Sambhaji Nalkar, Programme Co-ordinator and Prof. Uttam Sahane, SMS of KVK, Kosbad Hill and visited to Biofertilizer production unit on 21st January, 2016.



Visit of ICAR scientists to Puriya Park to see AVT-Wheat on 9th February, 2016



Dr. P. N. Rasal Associate Dean college of Agriculture, Dhule visited to PTC lab on 16th April, 2016

2. Education

Several visits were arranged for under Graduate students. The perse motto of these visits was to motivate the students, to utilize practical technology and to interact them with progressive entrepreneurs.

Tours/Visits of the students

S.N.	Name of Department	Place of Visit	Date
K. K. Wagh College of Agriculture, Nashik			
1	Department of Soil Science and Agril. Chemistry	Soil Testing Lab, Agriculture Research Station, Kundewadi	11/2/2016
		Organic Farm of Jitubhai Kutmutiya, Malegaon	01/03/2016
		Soil Testing Lab, NHRDF, Chitegaon and Soil Testing Laboratory, YCMOU, Nashik	08/03/2016
2	Department of Animal Science & Dairy Science	Visit to S.R. Thorat Dairy, Sangamner	02/03/2016

S.N.	Name of Department	Place of Visit	Date
3	Department of Botany	NHRDF Chitegaon Phata Niphad	25/01/2016 & 01/02/2016
		Mahabeej and PDKV Akola, ARC and KVK Dhule	22/02/2016 to 24/02/2016
		TNAU, Tamilnadu, KAU, Kerala, UAS, Bangalore & NBAIR, Bangalore	26/03/2016 to 04/04/2016
4	Dept. of Agronomy	Wheat Research Station, Kundewadi, Niphad.	11/02/2016
		Seed Processing Plant, MPKV, Rahuri	26/02/2016
		University of Agricultural Sciences, Dharwad, CFTRI, Mysore and UAS, Bangalore	28/03/2016 to 31/03/2016
5	Department of Horticulture	Triveni Vegetable and Grape Nursery, Niphad	09/02/2016
		Bohara Nursery, Nashik	23/02/2016
		KVK, YCMOU, Nashik NHRDF, Chitegaon	08/03/2016
		Horticulture Training Centre, Talegaon-Dabhade	10/03/2016
		Hitech Nursery unit, College of Agriculture, Pune	11/03/2016
6	Department of Agricultural Entomology	Tamilnadu Agricultural University, Coimbtore	28/03/2016
		Horticulture Research Station, Ooty, Tamilnadu	29/04/2016
		Kerala Agricultural University, Thrissur	30/03/2016
		National Beuro of Agricultural Insect Resources (NBAIR), Bangalore	01/03/2016
		University of Agricultural Sciences, Bangalore	02/03/2016
7	Department of Plant Pathology	Biofertilizer Production unit, MPKV, Rahuri	26/02/2016
		Organic Farm of Jitubhai Kutmutiya, Malegaon	01/03/2016
		YCMOU, Nashik	08/03/2016
		NHRDF, Chitegaon	8/03/2016
		BNF Scheme, College of Agriculture, Pune	11/03/2015

K. K. Wagh College of Agricultural Engineering & Technology, Nashik

1	Irrigation & Drainage Engineering	Jain Irrigation Pvt. Ltd, Jalgaon	29/01/2016 to 30/01/2016
2	Agricultural Process Engineering	Kadwa Co-operative Sugar Factory, Materwadi Rajaramnagar Tal. Dindori, Dist. Nashik	30/01/2016
		Sahaydri Foods Ltd Tal- Dindori, Dist- Nashik.	31/01/2016
		Shri Samartha Cold Storage, Lakhmapur Phata Tal - Dindori, Dist - Nashik.	30/03/2016

K. K. Wagh College of Agricultural Biotechnology

1	Plant Tissue Culture	Jain Irrigation Pvt. Ltd, Jalgaon	21/01/2016 & 4/03/2016
2	Crop Science and Plant Biotechnology	Mahatma Phule Krishi Vidyapeeth, Rahuri	15/03/2016
3	Animal Biotechnology	Mahatma Phule Krishi Vidyapeeth, Rahuri.	18/03/2016
4	Crop Science	Govardhan Eco village	19/03/2016

K. K. Wagh College of Food Technology

1	Food Science & Technology	Hindustan Coca Cola, Wada, Thane.	04/01/2016
		Mahananda Dairy, Mumbai	13/02/2016
2	Food Engineering	Thorat Dairy, Sangamner	02/03/2016
3	Food Trade and Business Management	Jai Yogeshwari Rice Mill, Igatpuri & Coca Cola Pvt. Ltd., Nashik	21/03/2016 22/03/2016

K. K. Wagh College of Agriculture Business Management, Nashik

1	Agriculture Business Management	Amalsad Vibhag Vividh Karyakari Sahakar Khedut Mandali, Amalsad, Gujarat.	16/02/2016
		ASPEE Agri. Business Mgmt. Institute, Navsari Agri. University, Navsari, Gujarat.	16/02/2016
		Anand Milk Union Limited (AMUL), Anand, Gujarat.	17/02/2016



S.N.	Name of Department	Place of Visit	Date
		International Agri. Business Mgmt Institute, Anand Agricultural University, Anand, Gujarat.	18/02/2016
		National Dairy Development Board, Anand, Guj.	18/02/2016
		Institute of Rural Management, Anand, Guj.	18/02/2016
		Indian Institute of Mgmt, Ahmadabad, Gujarat.	19/02/2016
2	Agricultural Marketing	Visit to Livestock Market, Loni & Sai Pravara Agro- processing Industries, Khadkewake.	09/03/2016
3	Agriculture and Allied Sciences	Visit to Green House, Puriya Park, Nashik.	11/03/2016
		Visit to Bharati Vidyapeeth Institute of Environment Education and research, Pune, Zoological Park, Katraj.	22/03/2016
K. K. Wagh College of Horticulture			
1	Horticulture	All India Co-ordinated Vegetable Improvement Project, Dryland Fruit Research Project, Sub-tropical Fruit Research Project, Citrus Improvement Project, Horticulture farm and Nursery Project, Onion Storage Project Tomato Improvement Project Post Harvest Technology Project and Agriculture Technology and Information Center (ATIC)	28/01/2016-30/01/2016
2	Horticulture	Energy park, Lakhi bagh unit, Watershed park, Seed Testing Laboratory unit, Winery Project unit Rubber plantation unit, Cashew nut development board project, Fruits processing unit, Horticultural nursery Coconut Development board project Biodiversity unit, Aromatic and medicinal plant, High-tech floriculture project and Centre of excellence for mango Japanese Garden	03/02/2016-05/02/2016



Educational Visit of forth year B.Sc.Agr. students to National Beuro of Agricultural Insect Resources (NBAIR), Bangalore



Educational Visit of forth year B.Sc.Agr. students to Seed quality laboratory, UAS, Dharwad



Educational Visit of Third year B.Sc.Agr. students to Mahabeej Bhavan Akola on 23rd February, 2016



Educational Visit of B.Tech. students to Cold Storage at Lakhamapur



Guidance on Plant tissue culture technique during visit to Jain irrigation to B. Sc. Biotech students



Educational Visit of B.Tech. Food Tech students to Jai Yogeshwari Rice Mill, Igatpuri



Educational Visit of Final year B.Sc.Agr. students to Biofertilizr unit of MPKV, Rahuri



Interaction of Soil Science And Agril. Chemistry Module student with ,Jitubhai Kutmutia, Organic Farmer at Malegaon

3. Human Resource Development

Training / Seminar / Workshop attended

S.N.	Trainings/ Seminars /Workshops attended	Name of the Staff	Date
K.K.Wagh College of Agriculture, Nashik			
1	National Information System on Agricultural Education Network (NISAGENET) and AISHE held at Dr. ASCAE, MPKV, Rahuri	Prof. R.M.Raundal	10/03/2016
K.K.Wagh College of Agricultural Engineering and Technology			
1	Emerging Trends in Heat Transfer Engineering held at NDMVP college of Engineering, Nashik.	Prof. A.V.Zoman	04/02/2016 05/02/2016
2	Good Management Practices for Arid Horticultural Crops to Combat Current Agrarian Crisis held at Bikaner, Rajasthan	Prof. A.N Shinde	25/02/2016 -05/03/2016
3	National Information System on Agricultural Education Network (NISAGENET) and AISHE held at Dr. ASCAE,MPKV, Rahuri	Ms.K.A.Deshmukh	10/03/2016
K.K.Wagh College of Agricultural Biotechnology			
1	"National seminar on Plant Genomics and Biotechnology: Challenges and Opportunities in 21 st Century held at Dept. of Agril-Biotech Orissa University of Agriculture and Technology, Bhubaneswar, Odisha.	Prof. S.S.Kharade	21/01/2016 - 26/01/2016
K.K.Wagh College of Food Technology			
1	National Conference on Food Processing And Technology: Current Status and Future Prospects held at Shoolini University, Solan, Himachal Pradesh	Prof.B.D.Rudrawar	25/02/2016 - 26/02/2016
2	International Conference on Nutrigenomics and Nutrigenetics – Present and Future Scenario held at K.T.H.M. College, Nashik	Prof.Maboodur Rahman Prof. P.V.Meghdambar Prof.S.A.Pingale & Prof.G.Chandana Devi	29/01/2016 - 30/01/2016
3	Seminar on Recent Advances in Biotechnology held at J. D. C. Bytco College, Nashik	Prof. V.R.Poojari & Prof. R.S.Sharma	03/03/2016
K.K.Wagh College of Agriculture Business Management			
1	International conference on Agricultural Economics – 2016 held at Dr. BSKKV, Dapoli.	P.K. Makhare P.P. Jagtap	12/02/2016 - 13/02/2016
K.K.Wagh College of Horticulture			
1	Good management practices for arid horticulture crops to combat current agrarian crisis held at Bikaner, Rajasthan	Y.D.Mehetre	25-02-2016 - 05-03-216

4. a) Experiential Learning Module

The college of Agriculture provides facility of conducting experiential learning modules on 'Nursery Management', 'Mass Production of Bio-agents and Bio-pesticides' 'Soil and Water Clinic' 'Milk & Milk Products' 'Production of Bio-fertilizer' 'Seed Production' and 'Plant Tissue Culture Technique' which will be helpful to the students to develop their entrepreneurial skill so that they can become job provider rather than job seeker.

Under the experiential learning programme students of VIII semester undergone through Hands on Training for the preparation of Nursery Sapling of various fruits and ornamentals plants. They produced various bio-agents and bio-pesticides and sold to the farmers. Value added milk products were prepared by them and sold to staff members. They also tested soil and water samples of farmers and given soil health card. Students prepared various bio-fertilizers and sold to grape, pomegranate and vegetables growers of Nashik. They undertaken wheat seed production programme of MAHABEEJ and prepared tissue cultured saplings of Banana. Through all these activities they generated receipt and also gains entrepreneurial skills.

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Students Handling Fermenter for Bio-Pesticides Production



Students are exposed to Commercial Production of Bio-pesticides



Approach grafting in Sapota at Puriya park



Air layering in Pomegranate at Makhmalabad farm



Wheat seed production plot



Rouging operation



Analysis of Soil & Water samples By Module Student (SSAC Dept. laboratory)



Mass multiplication by using carrier material

4. b) Hands on Training

The College of Agricultural Biotechnology provides facility for conducting HOT programme on projects related to Plant Biotechnology, Plant Tissue Culture, Biochemistry and Molecular Biology and Post Harvest and Food Biotechnology for solving the problems of farming community. Also this HOT program will be helpful to the students to develop their experimental skills so that they can become self entrepreneur rather than job seekers.

In the VIII semester, students had undergone hands on training programme for varietal identification of cowpea, grapes, wheat etc. by PCR technology under Plant Biotechnology and Biochemistry and Molecular Biology department. Also *in-vitro* plant regeneration of Banana Pomegranate, Gerbera and various Medicinal plants such as Kalmegh, Shtavari carried out under Plant Tissue Culture Laboratory. HOT students carried out Wine and Bioethanol production from fruits like Grapes, Guava, Pomegranate etc. Also analyze antioxidant and antimicrobial activity of various plant and fruit peels.

5. NSS (National Service Scheme)

K. K. Wagh College of Agriculture, Agricultural Engg. Agril. Biotechnology and Food Technology organized Special Winter Camp at Vilholi farm Nashik under NSS

Programme from 05th to 8th March, 2016. In all 125 students participated in the camp.

In this camp students performed Nala bunding, Contour bunding, Stone pitching activities at vilholi farm. Also students arranged *Jaldindi*, Street play, rally about importance of water and uses of water in scarcity condition. NSS students celebrated Teachers' Day, Karmaveer Kakasaheb Wagh Jayanti, Blood Donation Camp, *Matrubhasha Diwas* and Women's Day etc.



Celebration of Matrubhasha divas by B. Sc. (Agril Biotech) NSS students



Jalpridnya organized on an occasion of National Water week through NSS



Jaldindi organized by NSS Students of K.K.Wagh Agriculture & Allied Colleges on 07/03/2016



Stone pitching at Vilholi farm by NSS volunteers on 06/03/2016

6. Sales and Services

Following facilities and services are provided by Agri. and Allied colleges:-

- Seed production of field crops like soybean, wheat etc.
- Soil and water sample testing.
- Saplings of fruit crops viz. Pomegranate, Custard apple, Sapota, Mango, Guava, Tamarind and ornamentals and flowering plants.
- Production of bioagents and bio pesticides viz. ***Cryptolamous montrozauri*, *Trichoderma viridae*, *Pseudomonas fluorescense*, *Bacillus subtilis*, *Verticillium lecani*, *Beauveria bassiana*** and ***Metarhziium anisoplae*** etc.
- Production of ***Rhizobium*, *Azotobacter*, PSB, KSB, Acetobacter & Decomposing cultures**.

8. Extension Activities

A. Radio Talk

S.N.	Name of Programme	Name of Teacher	Date
K.K.Wagh College of Agriculture			
1	Haritgruhatil Garbera va Carnation lagwad tantradnan.	Prof. A. C. Jadhav	01/01/2016
2	Haritgruhatil Rabi Bhajipala pikanche kid rog niyantran	Prof.H.V.Deshmukh	28/01/2016
3	Samishra havamanat Phal Pikanche Niyojan	Dr.S.S.Bornare	11/02/2016
4	Pik Utpadanat Jaminichya Samuche va Sulphur che mahatva	Prof.P.V Shinde	22/02/2016
5	Recut nantar Draksh Bageche Pik Sanrakshan	Prof.T.B.Ugale	25/02/2016
6	Samishra Havamanat Kashi Ghyal Pakshyanchi Kalji	Prof. K.G.Mandwade	29/02/2016
7	Draksh bagechya April chantnichi purvtayari ani Vyavsthapan	Prof.Y.L.Bhagure	07/04/2016

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B) Popular Articles Published

S.N.	Name of Article	Name of Staff	Publication Detail
K.K.Wagh College of Agriculture			
1	<i>Mealybug Niyantanasathi Draksh Baget Jaivik Ghtkancha Vapar Faydeshir</i>	T. B. Ugale, U A Pawar & A. S. Mochi	Daily Agrowon 03/02/2016
2	<i>Kitaknashake hataltana ghyavayacci kalaji</i>	D.S.Kadam,S.A. Patil &H.V.Deshmukh	Agrotech, Vol.3 March. 2016
K.K.Wagh College of Agricultural Engineering and Technology			
1	<i>Bahuupyogi Shevga Kadhni Yantra</i>	Prof. A. S. Patil	Daily Agrowon, 17/01/ 2016
K.K.Wagh College of Food Technology			
1	<i>Kanda Prakriya Kalachi Garaj</i>	Prof.S.N.Chaudhari	Dyan Jyoti, May, 2016
2	<i>Aarogyavardhak Soyabean</i>	Prof.S.N.Chaudhari	Krushvi Vichar, March, 2016
3	<i>Shevga Ek Chamatkarik Vruksha</i>	Prof.S.N.Chaudhari	Godwa, March, 2016
4	<i>Aarogyawardhak Nachani</i>	Prof.S.N.Chaudhari	Krushvi Jagran, Feb.' 2016
5	<i>Dalimba Pasun Banawa jelly, chocholate aani nectar</i>	Prof.S.N.Chaudhari Mayur Nikam and Ansar Pathan	Krushvi Vichar, Feb.' 2016
K.K.Wagh College of Horticulture			
1	<i>Papanas lagvad tantradyan</i>	Prof.S.B. Vidhate, Prof.Y.A.Gaonkar, Prof.B.B.Tayade & Prof.Y.D.Mehetre	Krishivichar, January, 2016
2	<i>Kardaivaril kidinche ekatmik vyavasthapan</i>	Prof.A.V Ganore	Krushvijagaran, January 2016
3	<i>Shetkaryansathi kifaytshir phal-Passion phal</i>	Prof.S.B. Vidhate, Prof.B.B.Tayade & Prof.Y.D.Mehetre	Krishivichar, January, 2016
4	<i>Amba mohorache sanrankshan karne</i>	Prof.Y.D.Mehetre	Krushibhushan. Jan- March 2016
5	<i>Lasun lagvad tantradyan</i>	Prof.S.B. Vidhate, Prof.S.M.Karkute& Prof.Y.D.Mehetre	Krishiniray, February 2016
6	<i>Jagasathi bahu upyogi gay</i>	Prof.S.B.Vidhate& Prof.Y.A.Gaonkar	Krishidoot, February 2016
7	<i>Bhajipala sukvinyachya paddhati</i>	Prof.S.B.Vidhate, Prof.Y.A.Gaonkar & Prof.K.D.Rajput	Krishidoot, January 2016
8	<i>Mati Parikshan kalachi garaj</i>	Prof.N.S.Ghogare	Krishibhushan,Jan-Mar 2016
9	<i>Halad lagvadiche adhunik tantra</i>	Prof.S.B. Vidhate Prof. A.A.Chothe	Krishivichar, April, 2016

C. Expert Lectures

1. Prof. P. V. Shinde delivered lecture on "Soil Properties & Soil Analysis" at Regional Agriculture Extension Management Training Institute, Sambhaji Chauk, Nashik on 10th February, 2016.
2. Prof.H.V.Deshmukh participated as SMS for farmers training programme on "Cultivation of Oyster Mushroom " at Shri. Swami Samarth Agricultural Development & Research Charitable Trust, Dindori, Dist-Nashik on 28th February, 2016.
3. Prof.T.B.Ugale and Prof.B.R.Waghmode Participated in Farmers training programme arranged by Dr. D. G. Hapase and Associates, Pune, At: Newasa, Dist: Ahmednagar on 05th March, 2016.
4. Prof.Y.L.Bhagure has participated as SMS for farmers training programme on "Cultivation of Onion" at Saradwadi, Sinnar organized by CIPM, Nashik on 19th March, 2016.



Prof. H. V. Deshmukh Guiding the participants regarding filling of Mushroom bed

8. Research Highlights

Research Activities were conducted in Agricultural Faculty. The details are mentioned below.

S.N.	Research Activity	Name of College
K.K.Wagh College of Agricultural Engineering & Technology		
1	Efficient Encrypted Data Search as a Mobile Cloud Service	K. K. Wagh College of Agriculture
2	Development and Performance Evaluation of Raised Bed Preparator	K. K. Wagh College of Agricultural Engg. & Technology
3	Design of Flood and Drain Vertical Hydroponic System	K. K. Wagh College of Agricultural Engg. & Technology
4	<i>Bahuupyogi Shevga Kadhni Yantri</i>	K. K. Wagh College of Agricultural Engg. & Technology
5	Value chain analysis of Bakery Product (Bread) in Nashik District of Maharashtra State	K. K. Wagh College of Agriculture Business Management

1. Efficient Encrypted Data Search as a Mobile Cloud Service

S.S.Nikam and R.M.Raundal

Assistant Professor, Department of Computer Science, K. K. Wagh College of Agriculture, Nashik, Maharashtra, India

Abstract : Document storage in the cloud infrastructure is rapidly gaining popularity all the way through the world. However, data is not secure for consumers unless the data are encrypted for security. Encrypted data should be well searchable and retrievable without any privacy leaks, particularly for the mobile client. Although recent research has solved many security issues and risks, the architecture cannot be applied on mobile devices directly under the mobile cloud environment. This is due to the security flaws present in wireless networks, such as latency sensitivity, poor connectivity, and low transmission rates. This leads to a long search time and extra network traffic costs when using the traditional search schemes. In this study we are addressing these issues by proposing an efficient encrypted data search (EnDAS) scheme as a mobile cloud service. This novel scheme uses a lightweight trapdoor (encrypted keyword) compression method, which optimizes the data communication process by reducing the trapdoor's size for traffic effectiveness. In this study, we also propose two optimization methods for document search, called the Trapdoor Mapping Table (TMT) module and Ranked Serial Binary Search (RSBS) algorithm, to speed the search time.

Keywords: Mapping Table, Compression, Ranking Search, Encrypted Search, Mobile Cloud.

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2. Development and Performance Evaluation of Raised Bed Preparator

N.K.Gadge and A.N.Shinde

Assistant Professor, K. K. Wagh College of Agricultural Engg. & Technology, Nashik, Maharashtra, India

Abstract : Raised bed farming is recent phenomenon developed to overcome water logging and improve soil structure on cropping soils in the high rainfall zone. During the cool growing seasons, perched water tables can develop following rainfall due to the high clay content and low permeability of the subsoil, often resulting in complete crop failure when grown on flat or gently sloping ground without drainage. Raised Bed Farming is not a new idea. In Asia and other parts of the world, soil beds have been raised and furrows used for irrigation for centuries. In many countries including Australia, the technique has been used for many years by farmer and commercial vegetable and flower growers to assist with drainage. The development in the raised bed frame is undertaken to adjust spacing for different vegetable crops. The system has been widely adopted for grain and horticultural crop production.

Keywords : Soil structure, Permeability, Raised bed farming, Water logging, Drainage.

3. Bahuupyogi Shevga Kadhni Yantri

Amruta Patil

Assistant Professor, K. K. Wagh College of Agricultural Engg. & Technology, Nashik, Maharashtra, India

Abstract : Harvesting of drumstick pods by traditional methods such as use of hook and bamboo, climbing labour on tree is difficult task. In order to reduce losses during harvesting of drumstick and to maintain fruit quality, a manually operated drumstick harvester was developed at K. K. Wagh College of Agricultural Engineering and Technology Nashik. This harvesting machine includes four components namely shearing device, operating mechanism, supporting structure and collector bag. The working of this manually operated drumstick harvester is based on the principle of simple brake mechanism. During operation, it was observed that force required to cut the drumstick stalk was 5-15N and shearing strength was 0.33-0.75 MPa. The actual field capacity of harvester was 0.01323 ha/hr. Drumstick harvester become multipurpose to harvest sapota, mango, custard apple etc. by using of movable scissor which rotated in 180° for that holder is used.

4. Design of Flood and Drain Vertical Hydroponic System

Ashwini Patwardhan

Assistant Professor, Department of Irrigation and Drainage Engineering, K. K. Wagh College of Agricultural Engg. & Technology, Nashik, Maharashtra, India

Abstract : The study was conducted by installing the Flood and Drain Vertical Hydroponic System for cultivating Chinese leafy vegetable Pak-choi (var. Choko) of family Brassicaceae. The system was designed in the department of Irrigation and Drainage Engineering, K. K. Wagh College of Agricultural Engineering and Technology with the help of CATIA software. The sowing of 112 seeds of Pak-choi was done in perforated net pots containing media of cocopeat (8% N:P:K treated) and vermiculite in 1:1 proportion. Irrigation was applied to the crop by deep flow technique through beds. The average pH readings before and after each irrigation was 6.40 and 6.76 and the average values of EC before and after each irrigation was 0.79 mmhos/cm and 0.97 mmhos/cm, respectively. Also the average moisture content of media before and after each irrigation was noted, which was 18% and 71% respectively, available moisture content for complete growth of crop ranged from 46.73 to 57.05%. The water requirement of Pak-choi crop was 2.63 cm. The fertilizer applied was 1.9 gm N:P:K for overall growth of crop. The harvesting of crop was done after 70 days from sowing and the yield of crop was 7 kg from 1.8 m² area. The total cost of system was estimated to be Rs.3400 /-. Highest germination of 96% was achieved with our hydroponic system, which was 26% more than germination percentage quoted by the manufacturing company of seeds. Yield of Pak-choi crop in hydroponic system was twice than the yield obtained from field conditions. Therefore, the Flood and Drain Vertical Hydroponic System designed gave 66% more cropping area than the open field.

Keywords : Flood and Drain Vertical Hydroponic System, Pak-choi, irrigation.

5. Value chain analysis of Bakery Product (Bread) in Nashik District of Maharashtra State

P.K. Makhare and P.P. Jagtap

Assistant Professor, Department of Agricultural Economics, K.K. Wagh College of Agriculture Business Management, Nashik

Abstract : Bakery is a traditional and occupies an important place in food processing industry. Despite the advent of fully automatic and semi-automatic bread as well as biscuit making plants, a sizeable number of people still prefer fresh bread and the products from bakery.

Bread is a staple food prepared from dough of flour and water, usually by baking. Throughout recorded history it has been popular around the world and is one of the oldest artificial foods, having been of importance since the dawn of agriculture. Every 100 gm of bread gives calories of 265 gm through 3.29 gm fat, 49 gm carbohydrates and 9 gm of proteins. It is rich source of calcium and iron.

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Present study was undertaken to analyze marketing cost, price spread and producer's share in consumer's rupees of bread in Nashik district. For present study Nashik city from Nashik district was purposively selected. Total five bakeries were selected randomly as a sample size. Data collected for study pertaining to the period 2014-15. It was observed that bakery unit is profitable agro based enterprise and there is scope to expand existing bakery industries in Nashik city. Among the two channels are observed a channel II is more profitable than channel I.

8. Research Articles Published

S.N.	Name of Article	Name of Staff	Publication Detail
K.K.Wagh College of Agriculture			
1	Role of Information Technology In Agriculture Development	S. M. Hadole and Parmeshwari Pawar	National Conference on Science for Rural India, B.R. D.P.G. College, Deoria, U.P. ISBN-978-81-929510-5-8
2	Influence of Different Host Plants on the midgut protein of polyphagous Lepidopterous insect <i>Helicoverpa armigera</i> (Hubner)	T.B Ugale, U.A. Pawar, A.S.Mochi and V.G.Pimple	
3	Heterosis for seed yield and its components in sesame	A.S.Rathod,S.P.Pole R.C. Mahajan, M.V.Dhuppe and S.S.Bornare	
4	Inheritance of drought tolerance in crosses of two rows and six row barely (<i>Hordeum vulgare</i> e e L.) under moisture stress and non stress environment	S S Bornare, L. C. Prasad and J. P. Lal	
5	Role of Gender in Decision Making Process in Paddy and Sugarcane Crops Process	Parmeshwari Pawar and R. D. Pandya	
6	Yield Maximization and Nutrient Uptake By Green Gram (<i>Vigna Radiata</i> L.) Through Integrated Nutrient Management.	Sulbha Aware	
K.K.Wagh College of Agricultural Engineering and Technology			
1	Development and Performance Evaluation of Raised Bed Preparator	A. N. Shinde and N. K. Gadge	International Journal of Modern Engg. Research, Vol.06, Issue 1, January 2016, pp.41-45
2	Design of Flood and Drain Vertical Hydroponic System	Ashwini Patwardhan	Scientific Journal of Agricultural Engineering, Belgrade Zemun, SERBIA, No-1, Mar. 2016, pp.19-28
K.K.Wagh College of Agriculture Biotechnology			
1	The effect of UV-light on proteins isoflavonoids content of Soyabean seed	Wagh D. S., Pansare K. R., Mahure B.V. and Shahne P.G.	Recent advances in Biotechnology/ISBN.: 978-93-85664-28-1PP: 33-44R. N.Chandak Arts, J.D. Bytco Commerce & N.S. Chandak Science College, Opp. Birla Mandir, Nashik-Pune Road, Nashik Road-422 101.(Mah)
2	Micropropagation and Phytochemical Analysis of <i>Asparagus racemosus</i> (Shatavari)	Thakur Kishor, Chavan N. S. and Choudhary R. S.	Journal of Multilogics in science , Volume VI, Issue XVI (April 2016)
3	In-silico Identification & development of SSR Markers in Onion (<i>Allium cepa</i>) for Diversity Analysis.	S. S. Kulkarni and M. S. Nirgude	Recent advances in Biotechnology/ISBN No: 978-93-85664-28-1 State level seminar R.N. Chandak Arts, J.D.Bytco Commerce & N.S. Chandak Science College, Opp. Birla Mandir, Nashik - Pune Road, Nashik Road - 422 101. (Maharashtra)
4	Evaluation of Antioxidant and Antibacterial Properties of Ellagic Extracts from Pomegranate Peels	K.S. Palekar, M.S. Sable and S. Darshan	Recent advances in Biotechnology/ISBN No: 978-93-85664-28-1 State level seminar R.N. Chandak Arts, J.D.Bytco Commerce & N.S. Chandak Science College, Opp. Birla Mandir, Nashik - Pune Road, Nashik Road - 422 101. (Maharashtra)

S.N.	Name of Article	Name of Staff	Publication Detail
5	Therapeutic Importance of Fenugreek – A Reveiw	R. R. Aher and S. A. Belge	Interl. Journal of plant, animal and environmental science. Vol – 6, issue – 2.
6	High Performance Thin Layer Chromatography Fingerprint Profile of Rhizome Extracts of Five Important Curcuma Species	S. S. Kharade, Samal and Rout	Proceedings of The National Academy of Sciences, India - Section B: Biological Sciences in February, 2016
K.K.Wagh College of Food Technology			
1	Formulation and Sensory Quality of Legume Based Soup Powder	S.N. Chaudhari and N. P. Solankhe	Life Sciences Leaflets, Vol: 73, pp19-27, March, 2016.
K.K.Wagh College of Agriculture Business Management			
1	Value Chain Analysis of Bakery Product (Bread)in Nashik District	P. K. Makhare & P.P. Jagtap	Maharashtra Journal of Agricultural Economics Vol. -1, March 2016

9. Moments of the Pride

- Mr. Aakash Pawar II year student of K. K. Wagh College of Agriculture was selected for Inter University West Zone Football Tournament held at Dr. Harisingh Gaur University, Madhyapradesh, on 5th January, 2016.
- Mr. Kiran Pravin Magar student of K. K. Wagh College of Agriculture was selected for Inter University Kho- Kho Tournament held at Tamilnadu Agriculture University, Coimbatore (ICAR) from 22nd to 26th February, 2016.
- Ten students of K. K. Wagh College of Agriculture qualified IBPS and selected as Agriculture Field Officer in various Banks.
- Prof. A. C. Jadhav and Prof. T. B. Ugale received Best Writer award given by Krishidoot on 11th March, 2016.
- Prof. B. G. Biradar has got 1st prize in Inter College Research Festival "AVISHKAR" for year 2015-16 under teacher category on topic "Metagenomic and GCMS analysis of Panchagavya preparation" on 5th & 6th January, 2016 held at MPKV, Rahuri.
- Ms. Megha Anaa Ahirrao third year student of K. K. Wagh College of Agril. Biotechnology got 2nd prize in the Inter College Research Festival "AVISHKAR" for year 2015-16 under student category on topic "Bio-village: Model and poster" on 5th & 6th January, 2016 held at MPKV, Rahuri
- Mr. Shubham Gavhane student of K. K. Wagh College of Agricultural Engineering and Technology got 3rd Prize in State level Intercollegiate Debate-Elocution competition organized by New Arts, Commerce & Science College, Ahmednagar on 12th February, 2016
- Mr. Naik Rishi Ravindra, Mr. Kulkarni Tushar Sanjay and Pimpley Vaibhavi Avinash, students of final year, successfully qualified for PG entrance examination International English Language Testing System (IELTS) and they are selected for foreign studies.
- Mr. Naik Rishi Ravindra, final year student of K. K. Wagh College of Food Technology successfully qualified Gratitude Aptitude Test in Engineering (GATE 2016).

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- Ms. Dange Namrata Ashok, final year student of K. K. Wagh College of Food Technology secured second rank at National conference on Food Processing and Technology: Current Status and Future Prospects on 25th -26th February, 2016 at Shoolini University, Solan, Himachal Pradesh.
- Ms. Nikam Pranali Pravin, first year student K. K. Wagh College of Food Technology, secured first rank in State Level Drama competition organised by Gadkari Karangak Pimpri Chinchwad, Pune on 5th February, 2016.
- Boys and girls of K. K. Wagh Food Tech. got second rank in interfaculty tournament held at K. K. Wagh Agricultural and Allied Faculties on 8th - 12th January, 2016.



Felicitation of Mr. Rameshwar Pache (B.Sc. Agri student) at the hands of Shri Sunil Wankhede, Principal, RAMETI, Nashik for securing 3rd Rank in MCAER CET Examination on the occasion of Social Gathering.



Mr. Shubham Gavhane students of S.Y.B. Tech received the 1st prize for Elocution competition conducted by Government of Maharashtra PWD Dept. at Nashik on the occasion of "Jal Sahitya Sammelan, Nashik" at 19th March, 2016



Prof. A.C.Jadhav received Best Writer award given by Krishidoot on 11th March, 2016



Prof. T. B. Ugale received Best Writer award given by Krishidoot on 11th March, 2016



Felicitation of Miss. Mohini Jagtap for securing 8.8 grade in First Semester on the occasion of Parent Meeting on 19th March, 2016



Felicitation of Prof. B.G.Biradar for first prize in Avishkar 2016 (Teachers Category) at the hands of Dr. P.A.Turbhatmat, Associate Dean, Dr.A.S.College of Agril Engineering,M.P.K.V.Rahuri



Poster presentation by students of K. K.Wagh College of Food Technology, Nashik during the National Conference on food processing and technology Current Status and Future Prospects

10 . Students Selected for Higher Education

S.N.	Name of Student selected	Name of College
1.	Ms. Shimpi Sayali Dilip	M. Tech. in Food Fermentation Technology at University Institute of Chemical Technology, North Maharashtra University, Jalgaon.
2.	Ms. Dethe Shalakra Sunil	M.Sc. in Nutrition from Dr. BMN College, Mumbai.
3.	Mr. Virkar Kiran Dattatray	M. Tech. in Food Processing Technology at Lovely Professional University, Jalandhar.
4.	Ms. Lohakare Bhagyashri Rajaram	MBA in Human Resource Development at MAEER's MIT College of Management, Pune.
5.	Mr. Vamshi Krishna and Mr. Sahil Phatangare	Symbiosis Institute of Management, Pune
6.	Mr. Sahil Phatangare	MANAGE, Hyderabad for Post Graduation in Agriculture Business Management

11. Guest Lectures arranged by Agriculture & Allied Colleges

S.N.	Topic	Resource person/Institute	Date
K.K.Wagh College of Agriculture			
1	Bhartiy Vikasatil Tarunanche Yogdan Aani Swami Vivekananda	Mr. Vikas Vagle,ABVP, Nashik	18/01/2016
2	Workshop on TOEFL and GRE	Mr. Rohit Mehra Learning Links Foundation, New Delhi	09/02/2016
3	Hybrid Seed Production Technology in Cross Pollinated Crops	Dr. Pritam Shinde JRA Agricultural Research Station, Dhule	13/02/2016
4	Career Guidance Seminar	Mr. H.S.K. Tangirala Director Udaybhansinghji Regional Institute of Co-operative Mgmt, Gandhinagar, Gujrat	25/02/2016
5	Women Protection (Self Protection)	Miss. Suvama Handore,PSI Mhasrul Police Station,Nashik	02/03/2016
6	Role of Radio in Mass Communication in Agriculture Communication and Rural development.	Mr. Nanasahab Patil, Programme Officer, All India Radio, Nashik	02/03/2016
7	Career Guidance Lecture on Preparation for Competitive Examinations	Mr. Sagar Dharmadhikari, Easy Solution Academy,Nsk.	03/03/2016
8	Innovative MBA in Agri. Business Management Affiliated to Pune University + ICP In Israel & USA	Ms. Pallavi Godse, Asst. Director(MBA-ABM) ASMA Institute, of MGT, Pune	04/03/2016
9	Opportunities Through Agricultural Business Management	Mr. Amit Patil,MITCON, Pune	04/03/2016
10	Basics of Fertilizer Industry and its Policies in India	Mr. Chetan R. Patil,Sr. Officer (Marketing) RCF, Nashik	05/03/2016
11	Relation of Soil Micronutrients and Fruit Development in Grape	Dr M. A. Mathews,U C Davis University California, USA	18/03/2016
K.K.Wagh College of Agricultural Engineering & Technology			
1	Instrumentation and Control	Mr. A.S. Ambekar	02/04/2016
K.K.Wagh College of Agricultural BioTechnology			
1	Training for Educational & Professional Development	Mr. Subhash Rajguru Maharudra Career & Management Academy,Nashik	02/01/2016
2	Soft Skills & its Importance	Mr. Aniruddha Balwan HR Consultant,Green Naukari,Pune	23/01/2016
3	Molecular Plant Breeding	Dr.P.L.Kulwal Asso.Professor, State Level Biotechnology Centre, MPKV Rahuri	30/01/2016
4	Use of Molecular Marker in Plant Breeding	Mr. Hemant Kardile (Scientist ICAR-CIPR Shimla)	16/03/2016
K.K.Wagh College of Food Technology			
1	Entrepreneurship Development programme. Awareness Camp	Mr. Pankaj S. Ghadge	07/01/2016
2	Career Prospects in Bakery Industry	Mr. Milind Jahagirdar	19/01/2016
K.K.Wagh College of Agriculture Business Management			
1	Personality Development	Mr. Subhash Rajguru, Chief Consultant, Y. C. M. O. U., Nashik	17/03/2016



Dr. P. L. Kulwal-Molecular deliver lecture on Plant Breeding on 30th January, 2016



Mr. Nanasahab Patil, Agril. Programme Broadcasting Officer, Guiding students regarding Role of Radio in Agricultural Communication and Rural development.



Mr. Sunil Wankhede, Principal, RAMETI, Present as Chief Guest for Prize Distribution Ceremony of Mudhganth-2016



Students participated in Mrudhganth- 2016



Workshop on TOEFL and GRE was arranged Mr.Rohit Mehra, Learning Links Foundation guiding students regarding TOEFL and GRE on Tuesday, 9th February, 2016.



Felicitation of Shri.Baban Kakade by Dr.V.M. Sewlikar, Campus Co-ordinator, Saraswati Nagar Campus



Ms.Suvarna Handore. PSI, Adgaon Police Station, deverd lecture on Self Protection to girls students.



Dr. Mark Matthews, Plant Physiologist from America delivering lecture



Mr. Milind Jahagirdar, owner of Jahagirdar Bakers, addressing students on Career prospectus in Bakery Industry/Agro Processing Industry



Mr. A.S Ambekar delivering expert lecture on Instrumentation and Control



Mr. Sunakar Nayak delivering lecture on Career Opportunities in Biotechnology on 10.12.2015



Guest lecture of Shri.Baban Kakade, Tahsildar, Collector Office Nashik was arranged on 13th February, 2016 by K.K Wagh Career Academy

Extra Curricular Activities :

- Placement Cell organised Training for students from 27th to 31st January, 2016 for 3rd & final year students on CMS-I DH – Grape Study Project organized by Catalyst Management Systems, Bengaluru.
- Dr. S. M. Hadole and Prof. T. B. Ugale has participated in the meeting held at RAMETI, Nasik regarding the implementation of course for Agro Dealers at K. K. Wagh College of Agriculture affiliated to MANAGE, Hyderabad on 4th March, 2016.
- Students of ABM participated in the Seminar organized by MITCON, Pune held in January- 2016.
- II Parents Meet of first and second year students K. K. Wagh College of Food Technology, Agriculture, and Agricultural Biotechnology Nashik was organised on 12th 19th and 29th March, 2016 respectively. Parents participated in the meet shared their views after seeing various activities carried out by the college for the development of students.



Dr. S. M. Hadole, I/c Principal, College of Agriculture, interacting with Parents on the occasion of Parents Meet.



Councilor interacting with parents

12. Other Activities

Annual Social Gathering:

The College Annual Social Gathering (Mrudhganth-2016) was organized from 11th to 14th January, 2016. Students have actively participated in Cultural & Sports Activities. Mr. Sunil Wankhede, Principal, RAMETI, present as Chief Guest for Prize Distribution Ceremony of *Mudhganth* -2016. It was a combined event for all Agricultural Faculties.

