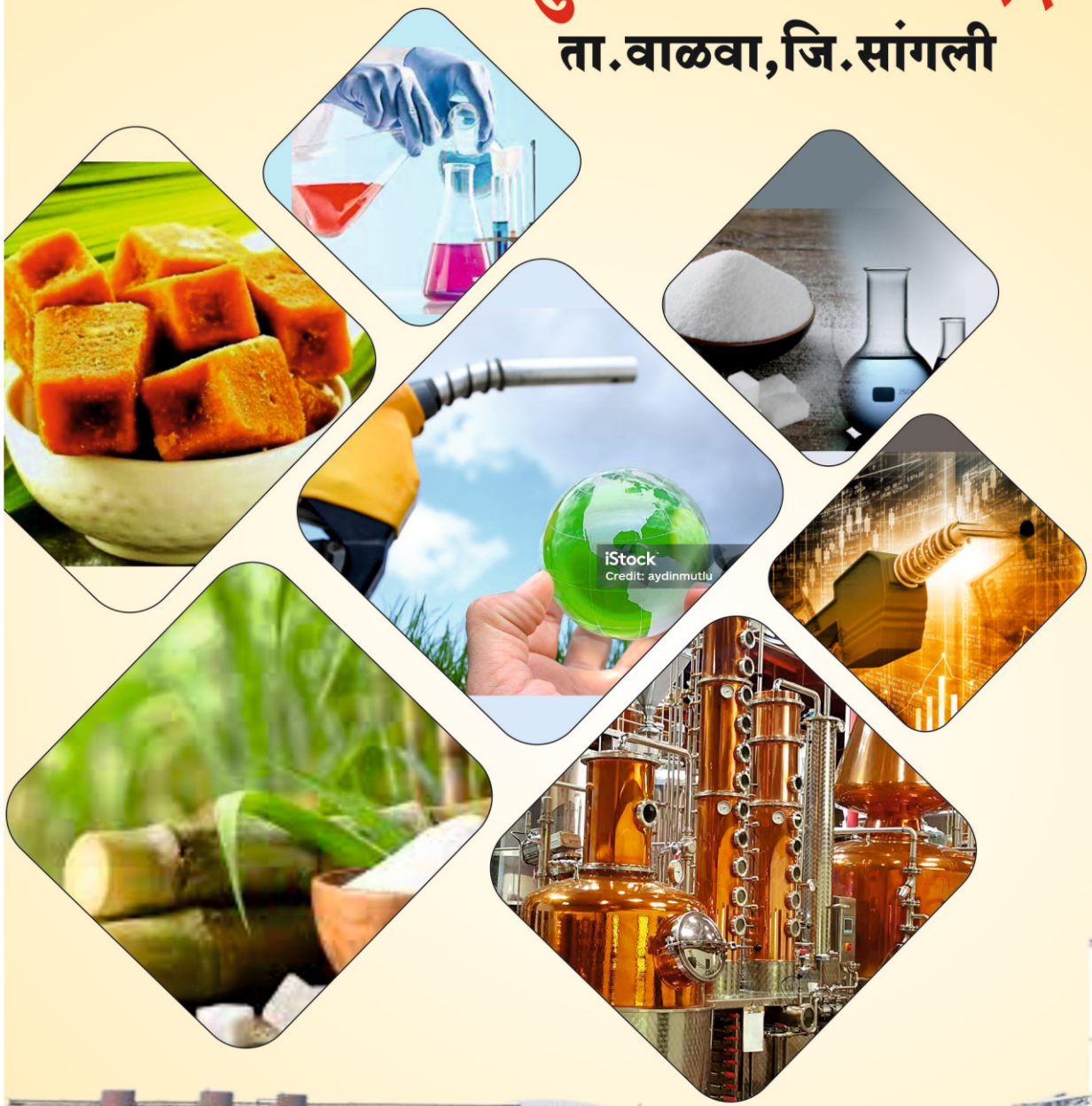
KSPMS

शिवाजी विद्यापीठ संलग्नीत

राजारामबापू

कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

ता.वाळवा,जि.सांगली



Sugartech 2024-25

RCST

कृषीवल शिक्षण प्रसारक मंडळ,संचलित

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी, इस्लामपूर

नवीन बहे नाका, बहे रोड, इस्लामपूर

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शुगरटेक नियतकालीका

सन २०२४-२५

अंक चौथा

- कार्यकारी संपादक -
प्रा.ए.व्ही.मगदूम

- मुख्य संपादक -
अर्चना कुंभार

Rajarambapu College of Sugar Technology, Islampur.

COLLEGE DEVELOPMENT COMMITTEE

Sr . No.	Member Category	Name	Position Held
1	Chairperson of the Management or his Representative	Shri B. D. Pawar	Chairman
2	Secretary of the Management or his Representative	Shri U. B. Pawar	Member
3	One Head of Department	Shri V. R. Kaledhonkar	Member
4	Three Teachers	Dr. S. G. Patil	Member
		Smt. S. S. Swami	Member
		Miss .D. V.Jadhav	Member
5	One Non-Teaching Employee	Shri S. B. Chavan	Member
6	Four Local Members Education	Dr .H. T. Dinde	Member
	Industry	Mr. Sharad F. Kadam	Member
	Research	Prof. Dr. S. V. Pore	Member
	Social Service	Dr.R. K.Mane	Member
7	Co-Ordinator IQAC	Mr. R. M. Pawar	Member
8	President and Secretary of Student Council	Miss. N.D.Thorat	Member
9	Principal of the College	Mr. A.V.Magdum	Member Secretary

INTERNAL QUALITY ASSURENCE CELL

Sr. No.	Name	Designation
01	Mr. A. V. Magdum	Chairman
02	Dr. S. G. Patil	Teacher Representative
03	Smt. S. S. Swami	Teacher Representative
04	Mr. S.S. Arekar	Teacher Representative
05	Smt. D. V. Jadhav	Teacher Representative
06	Mr. U. B. Pawar	Management Representative
07	Mr. S. B. Chavan	Administrative Representative
08	Mr. S.Y. Chavan	Local Society Representative
09	Mr. S.S. Pawar	Alumni Representative
10	Mr. S. F. Kadam	Industrial Representative
11	Mr. A. B. Kumbhare	Student Representative
12	Mr. A. B. Khot	Stakeholder Representative
13	Mr. R. M. Pawar	NAAC Coordinator

कृषीवल शिक्षण प्रसारक मंडळ,इस्लामपूर

शाखा विस्तार

* कृषी पदवीधर संघ लि.,इस्लामपूर
* स्किल डेव्हलपमेंट व्होकेशनल ट्रेनिंग सेंटर,इस्लामपूर
* मार्तंड नॅचलर स्वीटनर्स,रेठरे धरण
* रिसर्च ॲण्ड डेव्हलपमेंट सेंटर.
* शिखरे ट्रस्ट जयंत नेत्रालय, इस्लामपूर
* न्यु ज्युनिअर सायन्स व कॉमर्स कॉलेज,इस्लामपूर

(सायन्स,क्रॉपसायन्स, इंग्लिश कॉमर्स मिडीयम)

डिझाईन	मुद्रक
सौरभ बरडे	पुष्पराज ग्राफिक्स
७२७६२१७१०९	७०२००३७०३३

संपादकिय

महाविद्यालयाच्या शुगरटेक नियतकालिका चा चौथा अंक आपणा सर्वांच्या हाती देताना मला विशेष आनंद होत आहे. २१ व्या शतकात भारतीय औद्योगिक क्षेत्रात साखर उद्योग हा आदय उद्योग म्हणूनच ओळखला जातो. विशेषत महाराष्टात जिथे देशातील जास्तीत जास्त उसाचे उत्पादन व गाळप केले जाते. तिथे या क्षेत्रास अधिक महत्व आहे. साखर उद्योगाला भारतीय ग्रामीण अर्थव्यवस्थेचा शिल्पकार असे म्हणतात. या औद्योगिक क्षेत्राच्या घडामोडी पाहता साखर व उपपदार्थ उद्योगांना कुशल मनुष्य बळ पुरवण्याच्या संकल्पनेतून संस्थेचे विद्यमान अध्यक्ष माननीय बी.डी.पवार (साहेब)यांनी २०१० साली राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी महाविद्यालयाची स्थापना केली. संस्थेचे संचालक मा.उमेश पवार तसेच इतर पदाअधिकारी यांच्या मार्गदर्शनाखाली महाविद्यालयाची यशस्वी वाटलचाल सुरू आहे.

महाविद्यालयामध्ये टेक्निकल स्वरूपाचे ज्ञान दिले जाते. नियतकालिकामुळे विद्यार्थ्यांच्या प्रतिभेला वाव देणारे कथा,कादंबरी,कविता,चित्रकला,फोटोग्राफी, महाविद्यालयात होणारे उपक्रम,गुणवत्ता,प्रगती,सामाजीक कार्य, प्राध्यापक वर्गाचे शैक्षणिक संशोधन ,लेख, साखर व तत्सम उद्योगातील माहितीपर लेख,संशोधन वाचकांच्या पर्यत पोहचवण्यचे प्रभावी माध्यम आहे.

या अंकास पूर्णत्व देण्यासाठी संचालक मा.उमेश पवार, प्राचार्य, सर्व प्राध्यपक ,विभागीय संपादक आणि प्रशासकीय सेवकांचे मोलाचे सहकार्य लाभले आहे. सर्वांचे आभारी आहे.

सुधीर गायकवाड
संपादक

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

Krushival Shikshan Prasarak Mandal's

RAJARAMBAPU COLLEGE OF SUGAR TECHNOLOGY, ISLAMPUR

Faculty

Sr.No	Staff Name	Qualification	Post
1	Dr. A. N. Basugade	M.Sc. Ph.D	CEO
2	Mr. Kaledhonkar V.R.	B. Sc. ANSI (Sugar Tech)	Technical Director
3	Mr. A.V.Magdum	B.E. Instru. ME, M.Sc.	I/C Principal
4	Mr. M.L. Kadam	B.Sc. ANSI (Alcohol tech)	Head of Dep. Alcohol Tech
5	Dr. Patil S.G	M.Sc. Ph.D	Asst. Professor
6	Mr. Mujawar A.B.	M. PE.d. NET/SET	Physical Director
7	Mr. Pawar R.M.	M.Sc. Sugar Tech	Asst. Professor
8	Miss. Swami S.S.	M.Sc. Microbiology	Asst. Professor
9	Smt. Magdum A.N.	ME (Chemical)	Asst. Professor
10	Smt. Arekar S.S.	M.Sc. Sugar Tech	Asst. Professor
11	Mrs. Jadhav D.V.	M.Sc. (Organic Chemistry)	Asst. Professor
12	Miss. Pawar.S.J.	M.Sc. Microbiology	Asst. Professor
13	Mr. Pawar M.P.	B.Sc. AVSI (Alcohol tech)	Asst. Professor
14	Mr. Tanekhan S.H.	B.Sc. AVSI (Sugar tech)	Asst. Professor
15	Mrs .Kumbhar A.A.	B.A.	Asst. Librarian
16	Mr. Patil B.N.	AVSI Sugar Engg.	Asst. Professor (CHB)
17	Mr. Sawekar N.R.	B. Tech... AVSI. (Sugar Tech)	Asst. Professor (CHB)
18	Mrs. Kharat B.B.	M.Sc B.Ed (Mathematics)	Asst. Professor (CHB)
19	Miss. Jadhav V.V.	M.Sc. Physics	Asst. Professor (CHB)
20	Mrs. Patil j.	M.Sc. Botany	Asst. Professor (CHB)

Non Teaching Faculty

Sr. No	Staff Name	Qualification	Post
01	Smt. Pawar A.U.	B.Com.	Head Clerk
02	Mr. Chavan S.B	B.A.	Jr. Clerk
03	Smt .Pawar. S.J.	B.A.	Jr. Clerk
04	Mr. Patil J.V	B.A.	Lab. Assistant
05	Mr. Patil U.N	B.A.	Peon
06	Mr. Kamble P.M.	12^{th}	Peon

कृतिशील : बी. डी. पवार साहेब

श्री. बाबासाहेब पवार

सांगली जिल्ह्यातील सहकार, पर्यावरण, राजकीय, सामाजिक, शैक्षणिक आणि सांस्कृतिक क्षेत्रांत स्वतःच्या अविरत, अथक, खडतर जीवनाने स्वतःच्या कर्तृत्वाची मुद्रा उमटवणारे, निगर्वी, निरपेक्ष वृत्तीचे बाबासाहेब पवार हे सांगली जिल्ह्यातील महत्त्वाचे शिलेदार. ते एक चारित्र्यसंपन्न कृषि-औद्योगिक-पर्यावरण आणि सहकाराचे समृद्ध प्रतीक आहेत. त्यांच्या प्रदीर्घ कार्यकाळाने एक प्रभावशाली कुशल प्रशासक असे जनमत तयार झाले. काळाची पावलं ओळखून त्यांचे प्रशासन गतिमान होत राहिले. त्यांची कारकिर्द नव्या जाणिवेची जागृती होती. कृतिशील विचारांच्या मूल्यांची प्रतिष्ठापना करण्यासाठी त्यांनी आग्रह धरला, प्रगत कृषीतंत्रज्ञान शेती आणि शेतकऱ्यांसाठी उपलब्ध करून देण्यासाठी ते झटत राहिले.

ध्येयवाद अजातशत्रुत्वाचा, निःपक्षपातीपणा, कणखर बाण्याचे कुशल तितकेच संवेदनशील प्रशासक, अमोघ वक्तृत्व शैली, स्पष्टवक्तेपणा, नम्र, विनोदी शैली आणि बोलके सुधारक होण्यापेक्षा कर्ते सुधारक होण्याचे अंगी बनवलेले गुण या सर्वांचा संगम त्यांच्या व्यक्तिमत्त्वात दिसून येतो. त्यांचे जीवन आणि कार्य नव्या पिढीला नेहमी प्रेरणादायी आहे.

श्री. बाबासाहेब दत्ताजीराव पवार यांचा जन्म १५ मार्च १९४२ रोजी झाला. १९४२ हे साल 'चले जाव' चळवळीचे आणि भूमिगत आंदोलनाचे होते. स्वातंत्र्य चळवळीचा प्रभाव वाळवा तालुक्यावर प्रकर्षाने होता. रेठरे हरणाक्ष येथे प्राथमिक शिक्षण घेऊन पवार साहेबांनी बोरगाव येथे हायस्कूल शिक्षण घेतले. बोरगाव हे त्यांचे आजोळच होते. रेठऱ्यामध्ये तुकाराम मदने यांनी कृषी शिक्षण घेतले. ते गावातील पहिले उच्चशिक्षित व्यक्ती होते. ते आपल्या गावी जीपगाडी घेऊन यायचे. गावात जीपगाडी घेणारी पहिली व्यक्ती म्हणजे मदने. जीपचे आणि पर्यायाने उच्च शिक्षणाचे आकर्षण मदने यांच्यामुळे निर्माण झाले, असे म्हंटल्यास वावगे ठरणार नाही. पण मदने यांचे मत होते की, बाबासाहेब पवार यांनी वकील व्हावे, कारण त्या काळात सर्व पुढारी वकील होते.

वकील होऊन राजकारणात यावे अशी घरातील सर्वांचीच इच्छा होती. पण पवार साहेबांच्या मनातील आतला आवाज शेती शिक्षणाकडे कौल देत होता. त्यांना राजकारणापेक्षा शेतीचे आकर्षण अधिक होते. त्यांच्या मनाप्रमाणे ते पुणे येथील कॉलेज ऑफ ॲग्रीकल्चर येथे दाखल झाले. बी.एस्सी. ॲग्री ही चार वर्षाची पदवी होती. तेथेच त्यांनी एम. एस्सी ॲग्रीपर्यंत शिक्षण घेतले. हे शिक्षण घेत असतानाच भारत-चीन आणि भारत-पाक युद्ध झाले. यावेळी काही तातडीने आर्मी भरती झाली. त्याला जनरल आर्मी युनिट असे म्हटले जात असे. त्यामध्ये पवारसाहेब भरती झाले. जनरल आर्मीचे ट्रेनिंग डेहराडून परिसरात झाले. भारतीय वन खात्याचे मुख्य कार्यालय तेथेच होते. या परिसरातील हिरवळ, वनराई आणि स्वच्छता त्यांच्या मनात कायमची बसली. शुद्ध बियाणे पुरविणे, उसाच्या नवीन जाती शोधणे, उसावर प्रयोगासाठी क्षारपड क्षेत्राची निवड करणे, पाण्याचा प्रश्न सोडवणे, उसाचे क्षेत्र वाढविणे, ऊस लागण करण्यासाठी अनेक अभिनव अशा अनेक योजना राबविल्या. अशा उपयोजनांमधून राजारामबापू सह. साखर कारखान्याने ऊस क्षेत्र वाढवून नफा मिळवून दिला. याकामात त्यांना अनेकांचे सहकार्यही लाभले. आपल्यासारखे अनेक कृषी पदवीधर एकत्र करून त्यांची एक संघटना उभी केली. या संघाने आपल्या परिसरातील शेती विकासाला चालना देण्याचे महत्त्वाचे कार्य केले. बंद पडलेला कारखाना सुरू करणे मोठे आव्हानात्मक काम होते. मा. आप्पांनी पवार साहेबांना सर्वतोपरी सहकार्य केले. पवार साहेबांनी आपले आत्तापर्यंतचे सर्व प्रशासकीय कौशल्य पणाला लावले. कामगारांना विश्वासात घेतले. पाणी पुरवठा संस्था निर्माण केल्या. कारखाना पर्यावरण दृष्टचा सुशोभित केला. अल्पावधीतच कारखान्याने उत्कृष्ट पर्यावरण, उत्कृष्ट तांत्रिकता, उत्कृष्ट आर्थिक नियोजन असे पुरस्कार मिळविले. पवार साहेबांच्या कार्याची दखल घेऊन वसंतदादा शुगर इन्स्टिट्यूटने त्यांना 'बेस्ट मॅनेजिंग डायरेक्टर पुरस्कार देऊन गौरविले.

साहेबांनी परदेश दौरे केले. तेथे जे उत्तम पाहिले; त्यातील शक्य असेल तेवढे आपल्या प्रशासनात राबवले, इतरांनाही परदेश पाहायला लावला. स्वतःबरोबर इतरही सुजाण बनावेत हा दृष्टिकोन त्यांनी जोपासला. त्यांना अनेक पुरस्कारही प्राप्त झाले. त्यांच्या कार्याची पोहच पावती मिळाली. पण त्यांनी कधी पुरस्कारासाठी काम केले नाही. सतत अभिनव उपक्रम करत राहणे, हा त्यांचा स्थायीभाव. अजूनही त्यांच्या डोक्यात समाजहिताचे चांगले विचार आणि कल्पना आहेत. त्या कल्पना वृद्धापकाळामुळे राबवता येत नाहीत. याची त्यांना खंत आहे. त्यांनी आपल्या जीवनात कर्मयोग जोपासला. ते कार्य करत राहिले. फळाची अपेक्षा न ठेवता. त्यांच्या जीवनात आई, वडील, चुलते स्व. राजारामबापू पाटील, मा. जयंत पाटील, लोकनेते फत्तेसिंगराव नाईक (आप्पा), मा. बाबासाहेब पाटील (दादा), मा. मानसिंगराव नाईक (भाऊ), मा. अमरसिंह नाईक (पापा) आणि इतर मान्यवर व्यक्ती भेटल्या. या सर्वांनी त्यांना सहकार्य करून त्यांच्या विचाराला चालना दिली. त्यांनी व्यक्त केलेल्या योजना अंमलात आणल्या. त्यामुळे साहेबांना अधिक काम करत राहण्याची प्रेरणा मिळत गेली. त्यांच्या व्यक्तित्वाला पैलू प्राप्त झाले. त्यांनी कृतार्थ जीवन जगल्याचा आणि उत्तम कार्य हातून घडल्याचा आनंद त्यांच्या चेहऱ्यावर दिसून येतो. तो आनंद वृद्धिंगत होत राहो हीच अपेक्षा!

लोकनेते राजारामबापू पाटील

मा.ना.जयंत पाटील साहेब

जलसंपदा व लाभक्षेत्र विकास मंत्री,महाराष्ट्र राज्य

मा. बाबासाहेब पवार (साहेब)

अध्यक्ष,राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

मा. उमेश पवार

डायरेक्टर,राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

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श्री.व्ही.आर.कलेढोणकर

टेक्निकल डायरेक्टर,

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News Portal

राजारामबापू शुगर टेक्नॉलॉजीला नॅकचे 'ब' मूल्यांकन दर्जा

प्रतिनिधी
इस्लामपूर

येथील राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजीला नॅक बेंगलोरचे 'ब' मूल्यांकन प्राप्त झाले आहे. या नॅक कमिटीमध्ये बडोदा येथील महाराजा सायाजीराव युनिव्हर्सिसिटी कुलगुरु विजयकुमार श्रीवास्तव, श्रीनगर, जम्मू-काश्मिर येथील क्लस्टर युनिव्हर्सिटीचे प्रा.कुर्शीद अहमद मिर, दिबरु कॉलेज आसामचे माजी प्राचार्य डॉ.जितू बुरगोहीन यांनी कॉलेजची पहाणी केली.

यावेळी शुगर टेक महाविद्यालय हे शहरी भागामध्ये सुरू न करता ग्रामीण भागामध्ये सुरू केल्यामुळे ग्रामीण भागातील विद्यार्थ्यांना रोजगाराची संधी मोठ्या प्रमाणात उपलब्ध झाल्याबद्दल नॅक कमिटी कडून कौतुक करण्यात आले. संस्थेचे अध्यक्ष बी.डी.पवार यांच्या मार्गदर्शनाखाली व सचिव उमेश पवार यांच्या सहकार्याने महाविद्यालय प्रगती करत आहे. शुगर टेक्नॉलॉजीमध्ये नॅकचे मानांकन प्राप्त करणारे पहिले महाविद्यालय आहे. सचिव उमेश पवार यांनी प्राचार्य, सर्व शिक्षक, शिक्षकेतर कर्मचाऱ्यांना केलेल्या कामाची प्रशंसा केली.

महाविद्यालयाचा निकाल, प्लेसमेंट, उपलब्ध असलेल्या सोयी-सुविधा, प्राध्यापकांनी प्रकाशीत केलेले शोध निबंध यामुळे हे यश मिळाले, असे मत प्राचार्य डॉ.ए.एन.बसुगडे यांनी व्यक्त केले. नॅक कोआर्डीनेटर म्हणून प्रा.आर.एम.पवार यांनी काम पाहिले. प्रा.एम.एम. पाटील, प्रा.ए.व्ही. मगदूम, प्रा.डी.व्ही.जाधव, एस.के. गायकवाड, व्ही.आर.कलेढोणकर, प्रा. एम.एम.कदम आदींनी सहकार्य केले.

इस्लामपूर : राजारामबापू शुगर टेक्नॉलॉजी महाविद्यालयास नॅकचे ब मुल्यांकन प्राप्त झाल्यानंतर कॉलेज जवळ जलोष करताना सर्व प्राध्यापक व मान्यवर.

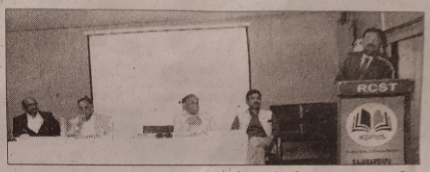
तरुण भारत | मंगळवार, ५ डिसेंबर २०२३

साखर उद्योगात रोजगाराच्या अनेक संधी : उत्तम पाटील

प्रतिनिधी
इस्लामपूर

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजीने ग्रामीण भागातील विद्यार्थ्यांना पारंपरिक शिक्षण पध्दती व्यतिरिक्त व्यावसायिक शिक्षण देऊन रोजगार निर्मिती केली आहे. विद्यार्थ्यांच्या समोर सद्य स्थितीतील साखर उद्योगाचा आढावा दिला. विद्यार्थ्यांनी धैर्य व संयम बाळगणे आवश्यक आहे. शुगर या क्षेत्रामध्ये भवितव्य उज्ज्वल आहे. प्रामाणिकपणे काम करत रहा. या स्पर्धेला सामोरे जाणे गरजेचे आहे, असे मत उदगिरी शुगरचे व्यवस्थापकीय संचालक उत्तम पाटील यांनी व्यक्त केले.

येथील राजारामबापू शुगर टेकमधील विद्यार्थ्यांना श्रीजी फ्युचरने सुरू केलेल्या अवॉर्डच्या वितरण प्रसंगी ते बोलत होते. यावेळी बी. एस्सी शुगरटेकचे विजय पाटील व एम.एस्सी शुगरटेकचे संदीप पाटील या गुणवंत विद्यार्थ्यांना चषक व रोख रक्कमेचा चेक देऊन सन्मानीत करण्यात आले.



इस्लामपूर : येथील राजारामबापू शुगर टेकमध्ये बोलताना उत्तम पाटील व्यासपीठावर आर.व्ही.सुलाखे, बी. डी. पवार, उमेश पवार व अन्य.

आर.व्ही.सुलाखे म्हणाले, परदेशातील साखर उद्योगापेक्षा भारतातील साखर उद्योगामध्ये सुधारीत तंत्रज्ञान वापरले जाते. या उद्योगाकडे नोकरीची संधी म्हणून न पाहता व्यापक दृष्टीने पाहण्याची गरज आहे.

बी.डी.पवार यांनी ग्रामीण भागातील विद्यार्थी साखर उद्योगामध्ये उच्च पदावरती कार्य करत असल्याचे समाधान व्यक्त केले. तसेच महिला वर्गाने देखील साखर उद्योग क्षेत्रात पदार्पण करण्याचे आवाहन केले.

उमेश पवार यांनी पुरस्कार प्राप्त विद्यार्थ्यांचे अभिनंदन केले. तसेच महाविद्यालयामध्ये विद्यार्थी हे शैक्षणिक ज्ञानाबरोबर प्रॅक्टिकल बरोबर संशोधन करण्याच्या दृष्टीने काम करत असल्याचे मत व्यक्त केले. प्रास्ताविक प्राचार्य डॉ.ए.एन. बसुगडे यांनी केले. स्वागत प्रा.ए.व्ही. मगदूम यांनी केले. यावेळी व्ही.आर. कलेढोणकर, प्रा.आर.एम.पवार, एस. के.गायकवाड यांची प्रमुख उपस्थिती होती. संयोजन एस.एस.आरेकर, आर.एस.पाटील, एस.एस.ठोंबरे, एस. बी.चव्हाण, ए.एस.मणेर यांनी केले. सूत्रसंचालन प्रा.मिनल पाटील, प्रा. दिपाली जाधव यांनी केले. आभार प्रा.एम.एल.कदम यांनी मानले.

सोमवार दि. २२ जानेवारी २०२४
तरुण भारत

इस्लामपूर : राजारामबापू कॉलेज ऑफ शुगरटेक कॉलेजला 'नॅक'चे ब मूल्यांकन प्राप्त होताच विद्यार्थ्यांनी जल्लोष केला.

राजारामबापू शुगरटेकला 'नॅक'चे ब मूल्यांकन

इस्लामपूर : येथील राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी कॉलेजला 'नॅक' (बंगळूर) चे ब मूल्यांकन प्राप्त झाले आहे. 'नॅक' कमिटीमध्ये प्रा. विजयकुमार श्रीवास्तव, कुलगुरू महाराजा सयाजीराव युनिव्हर्सिटी (बडोदा), प्रा. कुर्शीद अहमद मीर, परीक्षा नियंत्रक क्लस्टर युनिव्हर्सिटी (श्रीनगर, जम्मू काश्मीर), डॉ. जितू बुरगोहीन, माजी प्राचार्य दिबरू कॉलेज (आसाम) यांनी पाहणी केली. शुगरटेक महाविद्यालय शहरीऐवजी ग्रामीण भागात सुरू केले. ग्रामीण विद्यार्थ्यांना रोजगाराची संधी मोठ्या प्रमाणात उपलब्ध झाली. त्याचे 'नॅक' कमिटीकडून कौतुक करण्यात आले. अध्यक्ष बी. डी. पवार यांच्या मार्गदर्शनाखाली व सचिव उमेश पवार यांच्या सहकार्याने महाविद्यालय प्रगती करत आहे. शुगर टेक्नॉलॉजीमध्ये 'नॅक'चे मानांकन प्राप्त करणारे पहिले महाविद्यालय आहे. प्राचार्य डॉ. ए. एन. बसुगडे यांनी व्यक्त केले. नॅक को-आर्डिनेटर म्हणून प्रा. आर. एम. पवार यांनी काम पाहिले. प्रा. एम. एम. पाटील, ए. व्ही. मगदूम, डी. व्ही. जाधव, एस. के. गायकवाड यांनी कामकाज पाहिले. व्ही. आर. कलेढोणकर, एम. एम. कदम, आर. एन. भोसले, व्ही. जे. पवार, एस. एस. आरेकर, एस. बी. चव्हाण, ए. एम. गाडे, ए. एस. मणेर, एस. जे. पवार, ए. आर. माने, जे. बी. कोळी, ए. डी. पाटील, आर. एस. पाटील, प्रकाश कांबळे यांनी सहकार्य केले.

सकाळ | सांगली, गुरुवार, ७ डिसेंबर

साखर उद्योगात मोठी स्पर्धा : उत्तम पाटील

इस्लामपूर, ता. २९ : साखर उद्योगात मोठ्या प्रमाणात स्पर्धा असून याचा अभ्यास करणाऱ्या विद्यार्थ्यांनी संयम बाळगावा आणि आव्हानांना तोंड द्यावे. त्यांच्यासाठी भवितव्य उज्ज्वल असेल, असे मत 'उदगिरी शुगर'चे व्यवस्थापकीय संचालक उत्तम पाटील यांनी मांडले. राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजीमुळे ग्रामीण भागातील विद्यार्थ्यांना पारंपरिक शिक्षण पद्धतीव्यतिरिक्त व्यावसयिक शिक्षण देऊन मोठ्या प्रमाणात रोजगारनिर्मिती केली आहे, असे गौरवोद्गार त्यांनी काढले.

श्रीजी फ्युचर लीडर अवॉर्ड वितरण कार्यक्रमात ते बोलत होते. संस्थापक बी. डी. पवार अध्यक्षस्थानी होते. बी. एस्सी. (शुगरटेक) चे विजय पाटील व एम. एस्सी. (शुगरटेक) चे संदीप पाटील या गुणवंत विद्यार्थ्यांना चषक व रोख रकमेचा धनादेश देऊन सन्मानित करण्यात आले. आर. व्ही. सुलाखे म्हणाले, "परदेशातील साखर उद्योगापेक्षा भारतातील साखर उद्योगामध्ये सुधारित तंत्रज्ञन वापरले जाते. या उद्योगाकडे नोकरीची संधी म्हणून न पाहता व्यापक दृष्टीने पाहण्याची गरज आहे." बी. डी. पवार यांनी विद्यार्थ्यांच्या प्रोत्साहनासाठी 'श्रीजी फ्युचर'ने सुरू केलेल्या अवॉर्डचे कौतुक केले. महिला वर्गाने देखील साखर उद्योग क्षेत्रात पदार्पण करण्याचे आवाहन केले.

उमेश पवार यांनी मार्गदर्शन केले. व्ही. मगदूम यांनी स्वागत केले. प्राचार्य डॉ. ए. एन. बसुगडे यांनी प्रास्ताविक केले. व्ही. आर. कलेढोणकर, प्रा. आर. एम. पवार, एस. के. गायकवाड, सौ. एस. एस. आरेकर, श्रीमती आर. एस. पाटील, श्रीमती एस. एस. ठोंबरे, एस. बी. चव्हाण, ए. एस. मणेर उपस्थित होते. मीनल पाटील, प्रा. दीपाली जाधव यांनी सूत्रसंचालन केले. प्रा. एम. एल. कदम यांनी आभार मानले.

सकाळ

बायोफर्टीलायझर व बायोपेस्टीसाईट

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ट्रायको-शक्ती
बुरशी नाशक

फायदे

जैविक बुरशी नाशक,सेंद्रीय पदार्थाचे विघटन घडवून आणते, बियाण्याची उगवत शक्ती वाढवते

वापरण्याची पध्दत

❋ १ लि. ट्रायकोशक्ती २०० ली. पाण्यात मिसळून त्यामध्ये १ कि. गुळ व २ कि. मक्याचे पीठ घालून दोन दिवस वाढ करावी आणि जमिन वापशावर असताना पिकास आळवणी घालावी/फवारणी साठी वापरावे.

❋ बिज प्रक्रीया वा झाडाच्या बुंध्यापाशी आळवणीद्वारे ट्रायकोशक्ती परिणाम कारक ठरते ❋ सेंद्रीय खत निर्मितीमध्ये ही ट्रायकोशक्ती लाभदायक आहे

दक्षता

१. रासायनिक खतांसोबत वा किटकनाशकां सोबत वापरु नये.
२. सुर्यप्रकाशापासून दुर कोरड्या व थंड जागेत ठेवावे.

निर्मीत प्रमाणपत्र क्र-
बॅच नं.-
उत्पादन महिना-
अंतिम महिना-
भरलेवेळी वजन-
बॅक्टेरीअल काउंट -
किंमत सर्व करांसहीत-

Technical Grade

ऊस ,भाजीवाला,तेलबिया,द्राक्षे,डाळींब,कापूस केळी इ. पिकांसाठी उपयुक्त

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Tal.Walwa Dist.Sangli

KSPM's
Sugar Technology Research & Deveopment Centre,Islampur

रत्नपोटॅश

फायदे

❋ अविद्राव्य पालाश पिकास उपलब्ध करुन देण्याचे काम हे जिवाणू करतात त्यामुळे पालाश युक्त रासायनिक खतांची बचत होते.
❋ मुळांची व फुटव्यांची वाढ होते ❋ फळांचा आकार वाढतो.

वापरण्याची पध्दत

जमिन वापशावर असताना जमिनीवरती फवारणी साठी एकरी १ लि. रत्नपोटॅश २०० ली. पाण्यात मिसळून वापरावे किंवा पिकास आळवणी घालावी.
२. प्रति हेक्टरी ५ ली. वा प्रमाणात शेण/गांडूळ खतात मिसळून जमिनीत द्यावे

दक्षता

१. रासायनिक खतांसोबत वा किटकनाशकां सोबत वापरु नये.
२. सुर्यप्रकाशापासून दुर कोरड्या व थंड जागेत ठेवावे.

निर्मीत प्रमाणपत्र क्र-
बॅच नं.-
उत्पादन महिना-
अंतिम महिना-
भरलेवेळी वजन-
बॅक्टेरीअल काउंट -
किंमत सर्व करांसहीत-

Technical Grade

ऊस ,भाजीवाला,तेलबिया,द्राक्षे,डाळींब,कापूस केळी इ. पिकांसाठी उपयुक्त

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Tal.Walwa Dist.Sangli

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रायझोशक्ती

फायदे

• पर्यावरणपुरक • नत्र स्थिरीकरण करुन पिकास उपलब्ध करुन देते
• मुळांची व फुटव्यांची वाढ होते उत्पादन वाढवते
• रासायनीक खतांची बचत होते • जमीनीचे आरोग्य वाढवते

वापरण्याची पध्दत

• एकरी २ किलोपावडर /१ लीटर लिक्वीड
• जमीन वापशावर असताना जमीनीवर एकरी १ लीटर रायझोशक्ती २०० ली. पाण्यामध्ये मिसळून फवारावे किंवा पिकास आळवणी घालावी.
• बिजप्रक्रिया : १०० ग्राम रायझोशक्ती पावडर किंवा १०० मिली द्रावण कमीत कमी पाण्यामध्ये मिसळून त्यामध्ये १ कि. ग्राम बीज बुडवून (५ मिनटकालीन) ठेवावे,नंतर बीज सावली मध्ये सुकवून घ्यावे. ते लगेच पेरणीसाठी वापरावे.
• रोपांसाठी वापरण्याची पद्धत : १ कि.ग्राम रायझोशक्तीपावडरकिंवा १ ली लिक्वीड २०-२५ ली.पाण्यामध्ये मिसळून त्यामध्ये रोपाची मुळे बुडवून ते लागनीसाठी वापरावे

दक्षता

• रासायनिक खतांसोबत वा किटकनाशकां सोबत वापरु नये.
• सुर्यप्रकाशापासून दुर कोरड्या व थंड जागेत ठेवावे.

रायझोशक्ती सॉलीडपावडर/लिक्वीड
कॅरीअरमटेरीयल : लिग्नाइट /
टाल्कमपावडर/लिक्वीड मिडीया
बॅच क्रमांक :
उत्पादन दिनांक :
अंतिम दिनांक : उत्पादन दिनांकापासुन
६ महिन्यापर्यंत वापरण्यास योग्य
भरलेवेळीवजन :
बॅक्टेरीयलकाउंट :
किंमत सर्व करांसहीत :

Technical Grade

भुईमुग, सोयाबीन, मेथी यांच्यासाठी उपयुक्तव इतर व्हिदल कडधान्यांपिके इ.साठी उपयुक्त

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फॉस्फोशक्ती

फायदे

• पर्यावरणपुरक • फॉस्फरस स्थिरीकरण करुन पिकास उपलब्ध करुन देते
• मुळांची व फुटव्यांची वाढ होते उत्पादन वाढवते
• रासायनीकखतांचीबचतहोते • जमीनीचेआरोग्यवाढवते

वापरण्याची पध्दत

• एकरी २ किलोपावडर /१ लीटर लिक्वीड
• जमीन वापशावर असताना जमीनीवर एकरी १ लीटर अझोशक्ती २०० लीटर पाण्यामध्ये मिसळून फवारावे किंवा पिकास आळवणी घालावी

दक्षता

• रासायनिक खतांसोबत वा किटकनाशकां सोबत वापरु नये.
• सुर्यप्रकाशापासून दुर कोरड्या व थंड जागेत ठेवावे.

फॉस्फोशक्तीसॉलीडपावडर/लिक्वीड
कॅरीअरमटेरीयल : लिग्नाइट /
टाल्कमपावडर/लिक्वीड मिडीया
बॅच क्रमांक :
उत्पादन दिनांक :
अंतिम दिनांक : उत्पादन दिनांकापासुन
६ महिन्यापर्यंत वापरण्यास योग्य
भरलेवेळीवजन :
बॅक्टेरीयलकाउंट :
किंमत सर्व करांसहीत :

Technical Grade

ऊस, भाजीपाला, तेलबिया, द्राक्षे, डाळिंब, कापूस, केळी इ.पिकासाठी उपयुक्त .

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मेटाशक्ती

फायदे

जैविककिटकनाशक,उसामधील हुमनीवरती विशेष परिणामकारक पर्यावरणास व उपयुक्त .जैविक घटकांना धोका पोहचत नाही.

वापरण्याची पध्दत

१ ली. मेटाशक्ती २०० ली. पाण्यामध्ये घालून त्यामध्ये मक्याचे पीठ २ कि.व साखर १/२ कि. घालून दोन दिवस वाढ करावी आणि जमिन वापशावर असताना जमिनीवती आळवणी करण्यासाठी वापरावे.

दक्षता

१. रासायनिक खतांसोबत वा किटकनाशकां सोबत वापरु नये.
२. सुर्यप्रकाशापासून दुर कोरड्या व थंड जागेत ठेवावे.

निर्मीत प्रमाणपत्र क्र-
बॅच नं.-
उत्पादन महिना-
अंतिम महिना-
भरलेवेळी वजन-
बॅक्टेरीअल काउंट -
किंमत सर्व करांसहीत-

Technical Grade

ऊस ,भाजीवाला,तेलबिया,द्राक्षे इ. पिकांसाठी उपयुक्त विशेषकरुन हुमनीग्रस्त शेतामध्ये वापरावे.

उत्पादक Sugar Technology Research & Deveopment Centre,Islampur
Tal.Walwa Dist.Sangli

No Chemical Preservative | No Added Sugar
Gluten free | Super Healthy

Sugar Technology Research & Deveopment Centre,
Islampur,Tal.Walwa Dist.Sangli

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काम्पो प्लस

व्हीबीसी काम्पोप्लस हे सर्व प्रकारचे सेंद्रिय पदार्थ रुजवणारे जिवाणूसंवर्धक कंपोस्ट कल्चर आहे शेतातील पाचट व पालापाचोळा शहरातील टाकाऊ पदार्थ साखर कारखान्यातील पेक्समड, शेतातील ताग,धोंचा यासारखे सेंद्रिय पदार्थ कुजण्यासाठी अत्यंत उपयुक्त.

मात्रा - प्रति टन सेंद्रिय पदार्थ साठी १ लिटर कंपोप्लस वापरावे
पुरेसा ओलावा ठेवावा प्रति टन प्रेसमेड साठी ३०० ते ५०० मिली कंपोप्लस वापरावे
प्रेसमेड मध्ये ६५% आद्रता व इतरचे योग्य प्रमाण राखणे आवश्यक आहे
उसातील पाचट कुजविण्यासाठी प्रति एकर २ ते ४ लिटर कंपोप्लस वापरावे
पुरेसी आद्रता टिकवणे आवश्यक होणे

सावध - सूर्यप्रकाशात थंड व कोरड्या जागी ठेवावयात

सुचना- खताची फवारणी थंड वातावरणात सकाळी किंवा सायंकाळी करावी.
तसेच कोणत्याही रासायनिक घटकाबरोबर वापरु नये.

उत्पादक Sugar Technology Research & Deveopment Centre,Islampur
Plot No. F-5 MIDC ,Tal.Walwa Dist.Sangli

KSPM's
Sugar Technology Research & Deveopment Centre,Islampur

अझोशक्ती

फायदे

• पर्यावरणपुरक • नत्र स्थिरीकरण करुन पिकास उपलब्ध करुन देते
• मुळांची व फुटव्यांची वाढ होते उत्पादन वाढवते
• रासायनीकखतांचीबचतहोते • जमीनीचेआरोग्यवाढवते

वापरण्याची पध्दत

• एकरी २ किलोपावडर /१ लीटर लिक्वीड
• जमीन वापशावर असताना जमीनीवर एकरी १ लीटर अझोशक्ती २०० लीटर पाण्यामध्ये मिसळून फवारावे किंवा पिकास आळवणी घालावी

दक्षता

• रासायनिक खतांसोबत वा किटकनाशकां सोबत वापरु नये.
• सुर्यप्रकाशापासून दुर कोरड्या व थंड जागेत ठेवावे.

अझोशक्तीसॉलीडपावडर/लिक्वीड
कॅरीअरमटेरीयल : लिग्नाइट /
टाल्कमपावडर/लिक्वीड मिडीया
बॅच क्रमांक :
उत्पादन दिनांक :
अंतिम दिनांक : उत्पादन दिनांकापासुन
६ महिन्यापर्यंत वापरण्यास योग्य
भरलेवेळीवजन :
बॅक्टेरीयलकाउंट :
किंमत सर्व करांसहीत :

Technical Grade

ऊस, भाजीपाला, तेलबिया, द्राक्षे, डाळिंब, कापूस, केळी इ.पिकासाठी उपयुक्त .

उत्पादक Sugar Technology Research & Deveopment Centre,Islampur
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ऑसिटोशक्ती

व्हीबीसी १ ते १० मिली/लिटर (नुसार) **ऑसिटोशक्ती** हे ऑसिटोबॅक्टर जैविक खत असून मुख्यत्वे शर्करायुक्त पिकासाठी वातावरणातील नत्र खताची उपलब्धता करण्यासाठी उपयुक्त आहे

मात्रा २ लिटर **ऑसिटोशक्ती** एक बैलगाडी सेंद्रिय खतावरोबर प्रति एकर वापरावे

बेणे प्रक्रिया एकरी १ लिटर **ऑसिटोशक्ती** प्रती एकरी किंवा १० मिली प्रति लिटर पाण्यातून वापरावे

पिकावर फवारणी ५ ते १० मिलि प्रति लिटर पाण्यातून उभ्या पिकावर फवारणी करावी

बेणे प्रक्रिया सूर्यप्रकाशापासून दूर थंड व कोरड्या ठिकाणी ठेवावे

सुचना- खताची फवारणी थंड वातावरणात सकाळी किंवा सायंकाळी करावी.
तसेच कोणत्याही सायनिक घटकाबरोबर वापरु नये.

ऑसिटोशक्ती सॉलीडपावडर/लिक्वीड
कॅरीअरमटेरीयल : लिग्नाइट /
टाल्कमपावडर/लिक्वीड मिडीया
बॅच क्रमांक :
उत्पादन दिनांक :
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६ महिन्यापर्यंत वापरण्यास योग्य
भरलेवेळीवजन :
बॅक्टेरीयलकाउंट :
किंमत सर्व करांसहीत :

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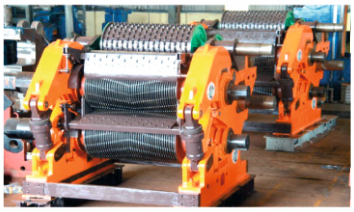
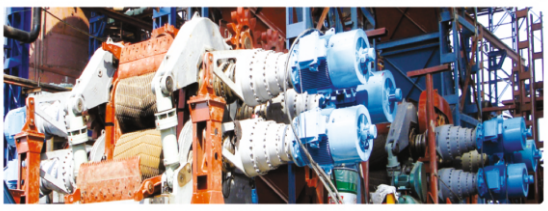

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SHRIJEE REFINED SUGAR PLANTS

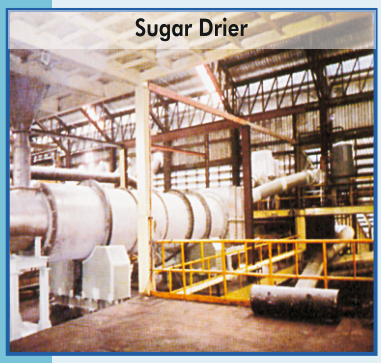
Overall Plant View

Bannari Amman Sugar 500 tons / day refined sugar plant (India)

Melt Clarification

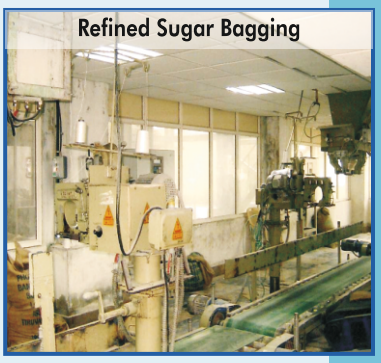
Filtration

ION Exchange System



Sugar Drier

Refined Sugar Bins



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This "patent applied" equipment/system allows highest 97% fibre removal from mixed juice with a residual fibre content of 0.2 to 0.3 g/l (200-300 ppm) in the mixed juice. This results into sugar colour improvement by 10-20 I.U. and saving of Rs. 8.5 per ton of cane crushed and multiple benefits like reduction in turbidity and viscosity of juice.

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Highest **99** nos. exported to various countries.
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Highest **37** nos. of Suviron's Low Retention Time Juice Clarifiers – SLRTC including **6** nos. exported.
Achieved a high juice flow rate at latest installed SLRT clarifier exhibiting consistently best performance results.
Similar feature SLRTC is recently commissioned at M/s. MRN Cane Power (India) Ltd. (A Unit of Nirani Group) and M/s. Twentyone Sugars Ltd.

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विविध उपक्रम

राजश्री शाहू महाराज जयंती

लोकनेते राजारामबापू पाटील जयंती

डॉ.एस.आर.रंगनाथन जयंती

महात्मा गांधी आणि लालबहादूर शास्त्री जयंती

डॉ.ए.पी.जे. अब्दुल कलाम जयंती

डॉ. बाबासाहेब आंबेडकर महापरिनिर्वाण दिन

राजश्री शाहू महाराज जयंती

लोकनेते राजारामबापू पाटील जयंती

मकरसंक्रांत

छत्रपती शिवाजी महाराज जयंती

राष्ट्रीय विज्ञान दिन

ज्ञानज्योती सावित्रीबाई फुले पुण्यतिथी

लीड कॉलेज वर्कशॉप

राष्ट्रीय मतदान दिवस

पारंपारिकवेशभूषा दिन

जागतिक महिला दिन

राष्ट्रीय सेवा योजना
विशेष श्रमसंस्कार शिबिर,रेठरेधरण.

उद्घाटन समारंभ.

श्रमदान करताना विद्यार्थी

रांगोळी स्पर्धा

फनीगेम्स

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हळदीकुंकूसमारंभ

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चित्रकला स्पर्धा

नेत्रतपासणी शिबिर

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वार्षिक पारितोषिक वितरण समारंभ

वार्षिक क्रीडा स्पर्धा

Field Visit

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RCST

गद्य विभाग

2024-2025

एका बॅक्टेरियाची आत्मकथा

मी कोण आहे, हे सांगताना मला थोडे हसू येते. कारण तुम्ही मला कधी पाहिलेच नाही. तरीही मी तुमच्या आजूबाजूला, तुमच्या अन्नात, पाण्यात, हवेत आणि अगदी तुमच्या शरीरात सतत वावरत असतो. मी म्हणजे बॅक्टेरिया – सूक्ष्म पण शक्तिशाली जीव.

माझा जन्म कुठल्यातरी मोठ्या गोंगाटात होत नाही. योग्य तापमान, ओलावा आणि अन्न मिळाले की मी शांतपणे जन्म घेतो. एकाचा दोन, दोनाचे चार आणि काही तासांत हजारो! माझी ही वाढ पाहून माणूस कधी घाबरतो, तर कधी थक्क होतो. कारण माझी ताकद संख्येत आहे, आकारात नाही.

मी अतिशय सूक्ष्म आहे—इतका की तुमच्या डोळ्यांच्या क्षमतेपलीकडे. तरीही माझी उपस्थिती टाळता येत नाही. मी हवा, पाणी, माती, अन्न आणि तुमच्या शरीरातही निसंकोच वावरतो. माझे नाव ऐकले की तुमच्या मनात भीतीची लहर उमटते; पण माझे खरे स्वरूप भीतीपेक्षा कितीतरी व्यापक आहे. मी म्हणजे बॅक्टेरिया—जीवनाचा आद्य साक्षीदार.

माझा इतिहास मानवाच्या इतिहासापेक्षा कितीतरी जुना आहे. पृथ्वीवर प्रगत जीवसृष्टी निर्माण होण्याआधीही मी अस्तित्वात होतो. एकपेशीय, साध्या रचनेचा असूनही मी विलक्षण जिद्दीचा आहे. योग्य तापमान, ओलावा आणि पोषणद्रव्ये मिळाली की मी द्विविभाजनाच्या प्रक्रियेद्वारे क्षणार्धात स्वत:ची प्रतिकृती निर्माण करतो. हीच माझी शक्ती—अदृश्य पण अजेय.

माणसाने मला अनेकदा फक्त रोगांचा जनक म्हणूनच पाहिले. प्लेग, कॉलरा, टायफॉईड, क्षयरोग यांसारख्या महामारींनी माझ्यावर संशयाची छाया टाकली. अँटिबायोटिक्स, लसी, निर्जंतुकीकरणाच्या मोहिमा—हे सगळे माझ्याविरुद्धचे शस्त्रसज्ज युद्धच होते. पण हे युद्ध अपूर्ण आहे, कारण माणसाला हे उमगायला वेळ लागला की प्रत्येक बॅक्टेरिया शत्रू नसतो.

तुमच्या शरीरात मी शांतपणे राहतो—विशेषत: पचनसंस्थेत. 'गट मायक्रोबायोम' म्हणून ओळखल्या जाणाऱ्या आमच्या समुदायाशिवाय तुमचे आरोग्य अपूर्ण आहे. अन्नाचे विघटन, पोषणद्रव्यांचे शोषण, तसेच जीवनसत्त्व 'B' व 'K' चे संश्लेषण ही कामे आम्ही न थकता करतो. रोग प्रतिकार शक्ती बळकट ठेवण्यातही आमचा मोलाचा वाटा आहे.

मानवाच्या खाद्यसंस्कृतीत माझे स्थान अत्यंत महत्त्वाचे आहे. किण्वन (Fermentation) ही प्रक्रिया आमच्याशिवाय अशक्य आहे. दही, चीज, लोणची, ब्रेड, वाइन—या सर्वांची निर्मिती आमच्या जैवरासायनिक क्रियांमुळेच शक्य होते.

तुमच्या जिभेवर नाचणाऱ्या चवीमागे आमची शांत मेहनत दडलेली आहे.निसर्गाच्या विशाल प्रयोगशाळेतही मी एक निष्ठावंत कामगार आहे. मृत सजीवांचे अपघटन करून त्यांना पुन्हा मातीमध्ये विलीन करणे, कार्बन व नायट्रोजन चक्र चालू ठेवणे, जमिनीची सुपीकता वाढवणे—ही जबाबदारी मी प्रामाणिकपणे पार पाडतो.

नायट्रोजन फिक्सेशनसारख्या प्रक्रियांद्वारे मी शेतीला जीवन देतो.आधुनिक विज्ञानाने मला नव्या भूमिकेत ओळखले आहे. जैवतंत्रज्ञान, औषधनिर्मिती, जनुकीय अभियांत्रिकी या क्षेत्रांमध्ये मी संशोधनाचा केंद्रबिंदू ठरलो आहे. इन्सुलिन, अँटीबायोटिक्स, एन्झाइम्स यांच्या निर्मितीत माझा उपयोग होतो.

पर्यावरण प्रदूषण कमी करण्यासाठी बायोरिमेडिएशनसारख्या प्रक्रियांतही मी सक्रिय आहे.तरीही माणूस आणि माझ्यातील नाते संतुलनावर अवलंबून आहे. स्वच्छतेचा अभाव, दूषित पाणी, अयोग्य अन्नसाठा या गोष्टी माझ्यातील काही बॅक्टेरियांना घातक बनवतात. दोष माझा नसून परिस्थितीचा असतो. माणसाने विवेकाने वागले, तर मी सहकारी ठरतो; दुर्लक्ष केले, तर संकट.मी लहान आहे, पण माझे अस्तित्व विशाल आहे. माझ्याशिवाय जीवनचक्र अपूर्ण आहे. म्हणून मला केवळ रोगांचे प्रतीक न समजता, जीवनाचा आधारस्तंभ म्हणून पाहा. कारण मी सूक्ष्म असलो, तरी सृष्टीच्या प्रत्येक श्वासात मी सामावलेलो आहे.

असिस्टंट प्रो. शिल्पा संजय स्वामी
अल्कोहोल टेक्नॉलॉजी विभाग

संघर्षातून शिखरापर्यंतचा प्रवास

भारतीय क्रिकेटच्या इतिहासात अनेक महान खेळाडू झाले, पण "कॅप्टन कूल" म्हणून ओळखला जाणारा महेंद्रसिंग धोनी हा त्यांच्यात वेगळाच ठरतो. त्याची कहाणी ही फक्त क्रिकेटपुरती मर्यादित नाही, तर ती प्रत्येक स्वप्न पाहणाऱ्या तरुणासाठी प्रेरणादायी आहे.

धोनीचा जन्म 7 जुलै 1981 रोजी झारखंडमधील रांची येथे झाला. त्याचे कुटुंब मध्यमवर्गीय होते. लहानपणी धोनीला क्रिकेटपेक्षा फुटबॉलची जास्त आवड होती. तो शाळेच्या फुटबॉल टीममध्ये गोलकीपर होता. मात्र त्याच्या कोचने त्याची चपळता पाहून त्याला क्रिकेटमध्ये विकेटकीपर म्हणून खेळायला सांगितले आणि इथूनच त्याच्या आयुष्याला एक नवं वळण मिळालं.

धोनीने सुरुवातीला स्थानिक स्तरावर क्रिकेट खेळायला सुरुवात केली. पण मोठ्या संधी सहज मिळाल्या नाहीत. त्याला आपल्या कुटुंबाला हातभार लावण्यासाठी रेल्वेत टीसी (ट्रॅव्हलिंग तिकीट एक्झामिनर) म्हणून नोकरी करावी लागली. दिवसभर नोकरी आणि उरलेल्या वेळात सराव—हीच त्याची दिनचर्या झाली. थकवा, अडचणी, आणि अनिश्चित भविष्य असूनही त्याने कधीच हार मानली नाही.

त्याच्या मेहनतीचे फळ अखेर मिळाले. 2004 साली त्याची भारतीय संघात निवड झाली. सुरुवातीचे सामने फारसे यशस्वी झाले नाहीत, पण 2005 मध्ये पाकिस्तानविरुद्ध त्याने 148 धावा करून सगळ्यांचं लक्ष वेधून घेतलं. त्यानंतर त्याने मागे वळून पाहिलं नाही.

2007 मध्ये धोनीला भारतीय संघाचे कर्णधारपद मिळाले. त्याच्या शांत स्वभावामुळे आणि अचूक निर्णयक्षमतेमुळे त्याने संघाला अनेक मोठ्या

विजयांकडे नेले. त्याच्या नेतृत्वाखाली भारताने 2007 चा टी-20 वर्ल्ड कप, 2011 चा वनडे वर्ल्ड कप आणि 2013 चा चॅम्पियन्स ट्रॉफी जिंकली. 2011 च्या वर्ल्ड कप फायनलमध्ये त्याने मारलेला विजयी षटकार आजही प्रत्येक भारतीयाच्या मनात जिवंत आहे.

धोनीची खासियत म्हणजे कठीण प्रसंगातही शांत राहण्याची त्याची क्षमता. तो कधीच घाईगडबडीत निर्णय घेत नाही. मैदानावर असो किंवा आयुष्यात तो नेहमी संयम आणि आत्मविश्वास ठेवतो. त्यामुळेच तो लाखो लोकांचा आदर्श बनला आहे.

त्याच्या आयुष्यात अपयशही आले, टीका झाली, संघातील स्थानावर प्रश्न उपस्थित झाले, पण त्याने प्रत्येक वेळी आपल्या कामगिरीने उत्तर दिले. त्याने आपल्याला शिकवले की यश मिळवण्यासाठी केवळ कौशल्य नव्हे, तर सातत्य, संयम आणि मेहनतही तितकीच महत्त्वाची असते.

महेंद्रसिंग धोनीची ही कथा आपल्याला एक महत्त्वाचा संदेश देते. "मोठं स्वप्न पाहा, त्यासाठी मेहनत करा, आणि परिस्थिती काहीही असो, स्वत:वर विश्वास ठेवा.

"आजही धोनी लाखो तरुणांसाठी प्रेरणास्थान आहे. त्याचा प्रवास आपल्याला दाखवतो की साध्या सुरुवातीपासूनही असामान्य यश मिळवता येतं. फक्त जिद्द आणि मेहनत हवी !

प्रणव कुंभार
B. Sc II

दिशा शोधताना

कॉलेजचं शेवटचं वर्ष... सगळ्यांच्या आयुष्यातील एक महत्त्वाचा टप्पा. स्वप्नं मोठी असतात, पण त्याचवेळी मनात प्रश्नांचं वादळही सुरु असतं—"पुढे काय?", "आपण योग्य मार्गावर आहोत का?", "आपल्याला खरंच काय करायचं आहे?"अदितीही अशाच विचारांमध्ये अडकलेली होती.

ती अभियांत्रिकीच्या शेवटच्या वर्षात होती. वर्गात ती चांगली होती, मार्क्सही ठीक होते, पण आतून मात्र ती गोंधळलेली होती. प्लेसमेंट सुरु झाल्या होत्या. तिचे मित्र एकामागून एक जॉब मिळवत होते. सोशल मीडियावर सगळे "Placed" पोस्ट टाकत होते... आणि अदिती मात्र अजूनही ठाम निर्णय घेऊ शकत नव्हती.

तिच्या मनात दोन पर्याय होते—एक म्हणजे चांगल्या पॅकेजची नोकरी स्वीकारणे, आणि दुसरं म्हणजे पुढे शिक्षण घेऊन स्वत:च्या आवडीच्या क्षेत्रात काहीतरी वेगळं करण्याचा प्रयत्न करणे. पण दुसरा मार्ग अनिश्चित होता... आणि अनिश्चिततेची भीती तिला सतत मागे खेचत होती.

एक दिवस ती कॉलेजच्या कॅम्पसमध्ये एकटी बसली होती. तिचे प्रोफेसर तिला पाहून तिच्याजवळ आले. त्यांनी सहज विचारलं, "काय झालं? इतकी विचारात का दिसतेस?"अदितीने मन मोकळं केलं. सगळं सांगितलं तिचा गोंधळ, भीती, आणि स्वत:बद्दलची शंका. प्रोफेसर शांतपणे ऐकत राहिले. मग त्यांनी फक्त एक प्रश्न विचारला. "तुला आयुष्यभर काय करायला आवडेल—ज्यामुळे तू थकली तरी समाधान मिळेल ? "हा प्रश्न ऐकून अदिती काही क्षण शांत राहिली. तिने कधीच स्वत:ला हा प्रश्न विचारला नव्हता. ती नेहमी सुरक्षित पर्यायाकडे पाहत होती, पण "आवड" या शब्दाकडे दुर्लक्ष करत होती.

त्या दिवशी ती घरी गेल्यावर तिने स्वत:शी प्रामाणिकपणे संवाद साधला. तिला जाणवलं की तिला केवळ नोकरी नको आहे, तर काहीतरी अर्थपूर्ण काम करायचं आहे. ज्यात तिची आवड, तिची ओळख दिसेल.

काही दिवसांनी तिने एक धाडसी निर्णय घेतला. तिने प्लेसमेंटमधील ऑफर नाकारली आणि पुढील शिक्षणासाठी अर्ज केला. हा निर्णय सोपा नव्हता . घरच्यांना समजावणं, मित्रांच्या तुलनेत मागे पडल्यासारखं वाटणं, आणि अनिश्चित भविष्य...

सगळंच कठीण होतं.पण हळूहळू तिने स्वत:चा मार्ग शोधायला सुरुवात केली. नवीन गोष्टी शिकल्या, चुका केल्या, पुन्हा उभी राहिली. काही वर्षांनी, ती ज्या क्षेत्रात काम करत होती, तिथे तिला समाधान मिळू लागलं. पैसे कदाचित सुरुवातीला कमी होते, पण तिच्या कामात आनंद होता—आणि तोच तिच्यासाठी सर्वात मोठा यश होता.अदितीची कथा ही केवळ एका मुलीची नाही, तर प्रत्येक त्या विद्यार्थ्याची आहे जो आयुष्याच्या वळणावर उभा आहे.

ही कथा आपल्याला सांगते—सगळ्यांचा मार्ग सारखा नसतो. कधी कधी थोडं थांबून, स्वत:ला समजून घेणं, आणि आपल्या मनाचा आवाज ऐकणं हेच खरं धैर्य असतं.यश म्हणजे फक्त मोठा पगार किंवा पद नाही,तर आपण जे करतो त्यात मिळणारं समाधान हेच खरं यश आहे.

प्रणव खुटाळे पाटील
B. Sc III

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

RCST

पदव्य विभाग

2024-2025

"बॅक्टेरियांची कॅम्पस लाइफ"

कॅन्टीनमध्ये गेलो तर,
समोशावर बसले काही जीव,
म्हणाले, "भाऊ, तू मागून ये
इथे आम्ही करतो ग्रुप स्टडी, शिवशिव!"
लेफ्ट साइडला **E. coli,**
राइटला **Staph** ची मंडळी,
तोंडात घास टाकण्याआधी लढवत होते
स्वतःची डाळ-भाजी!
लॅबमध्ये टेस्टिंग करताना
मायक्रोस्कोपखाली दिसले डोळे,
कुणी म्हणतं **"Bro, chill, harmless**
आहोत! "
कुणी धरतं हातात रोगांचे ढोले!
क्लासमध्ये प्रोफेसर बोलतो,
"जीवाणूंच्या प्रजाती खूप,"
आम्ही मात्र मागच्या बेंचवर
"सर, आमच्या नोट्सपेक्षा जास्तच आहे
रूप!"

हॉस्टेलमध्ये रात्री नूडल्स
शिजवतानाभांड्यात उठला
fermentation चा **rap,**
मी म्हणालो,
"इतका **talent** कुठून येतो?"
ते म्हणाले,
"We live on every app!"
हात धुणं, मास्क लावणं - यावर त्यांची
नेहमी चिडचिड,म्हणतात,
"भाऊ, थोडं राहू दे ना,आम्हालाही
Airbnb ची गरज!"
अशीही बॅक्टेरियांची टोळी-कॅम्पसवर
कायम धम्माल करत,कधी मित्र, कधी
खोडकर शत्रू, लाइफमध्ये थोडं **extra**
drama भरत!–

सायली पवार
अल्कोहोल टेक्नॉलॉजी विभाग

खुरपं

आईच्या हातातलं खुरपं,
जणू अर्धचंद्रच खादा,
राबराबून घराला
प्रकाशित करणारा...

पाठीवर अंगण,
डोईवर आभाळ,
भेगाळलेल्या हातांनी खुरपून
पिकविते सोन्याचा माळ...

खुरप्याची मशागत,
संस्कारांची रीत,
भलरीचं गीत—कष्ट हेच
तिच्या जीवनाचं संगीत...

आईचा पदर बांधावर
ओलाचिंब,खुरप्यानेच अंकुरतो
कोंब,आणि त्याच
खुरप्याने उमटतो
आईच्या आयुष्याचा शेवटचा टिंब...
आईच्या आयुष्याचा शेवटचा टिंब...

अनिकेत फरांदे
B.Sc. II

आस

आस असावी जिंकण्याची,
जरी झाला पराभव
तर...तयारी असावी हार पत्करण्याची।
एक संधी चुकली म्हणून काही फरक पडत नाही...
शेवटी आयुष्य आहे,
एकाच पराभवाने कोणी मरत नाही।

इच्छा असावी पुन्हा प्रयत्न करण्याची,
तीच खरी वेळ असते
पहिली चूक सुधारण्याची।

स्वत:वरचा विश्वास कधीच ढळू द्यायचा नाही...
ज्या क्षेत्रात पाऊल टाकलं,
तिथे जिंकल्याशिवाय माघार घ्यायची नाही।

पराभव हा शेवट नसतो...
यश हे अंतिम नसतं...
झालेल्या चुका दुरुस्त करून
पुढे चालत राहायचं असतं।
असंच तर आयुष्य असतं...

म्हणून एकाच पराभवाने किंवा विजयाने
आपलं व्यक्तिमत्व ठरवायचं नसतं।
एकमेकांच्या भावना समजून घेऊ,
जात-धर्म सोडून माणुसकीच्या नात्याने वागू।
आयुष्य एकदाच आहे
ते आपण आनंदाने जगू

सौरभ काटे
B.Sc. II

एकांत

किती काही सांगायचं होतं,
नात्याचा आणि माझा संवाद झाला;
किती काही सांगायचं राहून गेलं,
नात्याचा आणि माझा संवाद वाढत गेला...
किती काही बोलायचं होतं,
मला त्याला अनुभवायचं होतं;
पण किती काही बोलायचं राहून गेलं,
माझ्यातल्याला शोधायचं होतं-
पण शोधायचं राहून गेलं...
माझ्यातल्या मला एकांतात अनुभवायचं
होतं, पण अनुभवायचं राहून गेलं...
जुन्या आठवणी हळूच हाक देतात,त्यांना
घेऊन माझ्यातल्या आठवणी जाग्या
करायच्या होत्या; सुखाच्या आठवणीं
बरोबर दु:खही नकळत सोबत येतं-
आणि तरीही, शोधायचं राहून गेलं...
मात्र वाटतं- माझ्यातला तू एकांतात
भेटायला येशील कधीतरी;
आणि मीही जाईन तुझ्याकडे,
पण तरीही आपली भेट कुठेतरी अपुरीच
राहिली...
तो येतोय, मी जातेय—पण एकत्र येणं
राहून गेलं;

ओठ मात्र दोघांनाही भेटीची, तरीही
काहीच नवीन नव्हतं त्यात... हरवलेलं
शोधायचं होतं,अनुभवायचं होतं, पण
दोन्हीही राहून गेलं...
म्हणून वाटतं—त्या एकांतालाच सोबतीला
घेऊन शोधणं आणि अनुभवणं,कधीतरी
पूर्ण होईल...
कधीतरी तो येईल माझ्याकडे,कधीतरी
मी ही जाईन त्याच्यापाशी-
माझ्यातल्या मला शोधायला आणि
अनुभवायलाही...
पण तरीही वाटतं—माझ्यातल्या तुला
एकांतात अनुभवायचं होतं
आणि तेच अनुभवणं राहून गेलं...
तरीही तो आहे सोबतीला—तो
एकांत...अनुभवायचं राहिलेलं
अनुभवण्यासाठी...
मी त्याला अजूनही भेटायचं आहे,
त्याचा आणि माझा एकांत अनुभवायचा
आहे;पण माझ्यातल्या मला हरवलेलं
शोधायचं होतं आणि तेही राहून गेलं..

श्रावणी प्रविण मालेकर
B.Sc. II

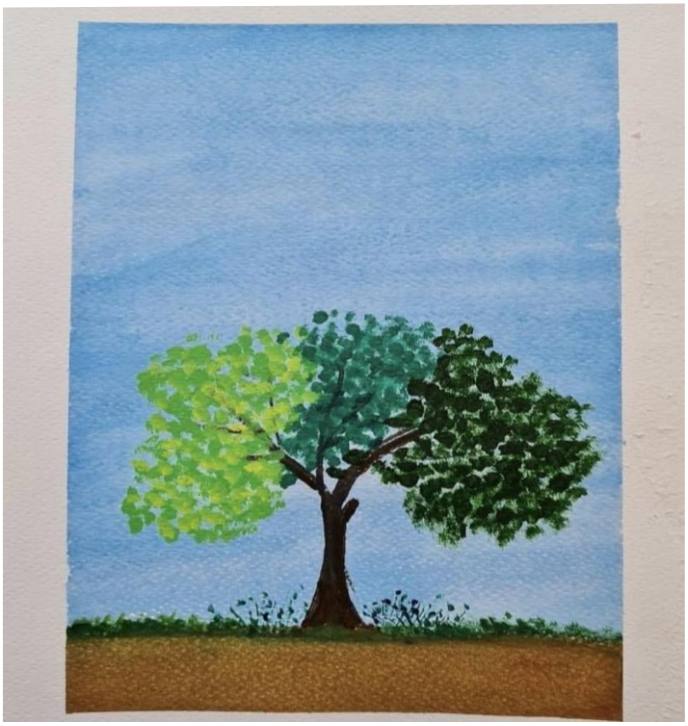
आईसाठी लेक

आईसाठी लेक संकटावरची मात असते,
आईसाठी लेक दु:खातला आनंद असते।
आईसाठी लेक अंधारातला प्रकाश असते,
आईसाठी लेक काळजाचा तुकडा असते।
आईसाठी लेकीचा जन्म म्हणजे सण असतो,
आईसाठी लेकीचं हसणं म्हणजे मंदिराचा कळस असतो।
आईसाठी लेक कधीच डोक्यावरचं ओझं नसते,पण
आईसाठी लेक परक्याचं धनही असते।
आईसाठी लेक देव्हाऱ्यातली देवी असते,
आईसाठी लेक तिजोरीतली लक्ष्मी असते।
आईसाठी लेक देवाचं अनमोल लेणं असते,
आईसाठी लेक नेहमीच आनंदाचं देणं असतं।

कोमल पवार
(अकाउंट विभाग)

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

अनिकेत फरांदे
DPO



अनिकेत फरांदे
DPO

2024-2025

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

अनिकेत फरांदे

DPO

2024-2025

जिमखाना विभाग

शैक्षणिक वर्ष 2024 -25 या वर्षांमध्ये महाविद्यालयाच्या जिमखाना विभागामार्फत वार्षिक क्रीडा स्पर्धेचे आयोजन करण्यात आले होते. त्यामध्ये वैयक्तिक व सांघिक अशा स्पर्धा घेण्यात आल्या. सदर स्पर्धेचे उद्घाटन प्राचार्य डॉ. ए. एन. बसुगडे यांच्या हस्ते करण्यात आले .सदर स्पर्धेमध्ये 100 मीटर धावणे, 200 मीटर धावणे, 400 मीटर धावणे, त्याचप्रमाणे गोळा फेक, लांब उडी या वैयक्तिक तर इनडोअर खेळामध्ये बुद्धिबळ, कॅरम या स्पर्धा घेण्यात आल्या. तसेच क्रिकेट, हॉलीबॉल या सांघिक क्रीडा प्रकारांचा समावेश करण्यात आला होता.

सदर स्पर्धेमध्ये विजय झालेल्या विद्यार्थ्यांना वार्षिक पारितोषिक वितरण समारंभामध्ये महाविद्यालयाच्या प्रांगणात प्रमुख पाहुण्यांच्या हस्ते प्रशस्तीपत्र व सन्मानचिन्ह देऊन सन्मानित करण्यात आले.

अक्रम मुजावर
विभागप्रमुख

सांस्कृतिक विभाग

2024-25 या शैक्षणिक वर्षांमध्ये महाविद्यालयातील सांस्कृतिक विभागामार्फत प्रथम वर्षामध्ये प्रवेश घेतलेल्या विद्यार्थ्यांचे स्वागत समारंभ आयोजित करण्यात आला.

सांस्कृतिक विभागामार्फत विविध जयंती पुण्यतिथी साजऱ्या करण्यात आल्या. मकर संक्रातनिमित्त तिळगुळ वाटप व शाही दसऱ्यानिमित्त महाविद्यालयांमध्ये दांडियाचे आयोजन करण्यात आले.तसेच सांस्कृतिक विभागामार्फत विद्यार्थ्यांसाठी पारंपरिक वेशभूषा दिन साजरा करण्यात आला. सांस्कृतिक विभागामार्फत वार्षिक पारितोषिक वितरण समारंभ साजरा करण्यात आला

डि.व्ही.जाधव
विभाग प्रमुख

शुगर टेक्नॉलॉजी विभाग

शैक्षणिक वर्ष 2024- 25 मध्ये बी.एस्सी. भाग दोन व एम एस्सी भाग एक व दोन या विद्यार्थ्यांसाठी राजारामबापू सहकारी साखर कारखाना साखराळे युनिट नंबर-1 व वाटेगाव युनिट नंबर- 2 तसेच डॉ. पतंगराव कदम सोनहिरा स.सा. का. वांगी येथे फिल्ड व्हिजिट आयोजित केली गेली.बी. एस्सी भाग तीन व एम. एस्सी भाग दोन या विद्यार्थ्यांना चार महिने कालावधीसाठी इंटरनशिप साठी महाराष्ट्र व कर्नाटक मध्ये वेगवेगळ्या साखर कारखान्यांमध्ये पाठवले गेले. विद्यार्थ्यांना साखर कारखान्या तील कोर्सची माहिती कॉलेजमध्ये मिळावी यासाठी मॉडेल रूमची निर्मिती केली गेली.

तसेच प्रा. यु. एन. खरात यांचे रोल ऑफ बॉयलर, श्री. एन. आर. सावेकर यांचे मिलिंग, डॉ.एम. एस. माळी यांचे पर्सनॅलिटी डेव्हलपमेंट, डॉ.अंजली पाटील यांचे व्यसनमुक्ती, श्री. एस. एन. पाटील यांचे जैविक ऊस शेती या विषयावर गेस्ट लेक्चर आयोजित केले गेले. महाविद्यालयामध्ये आयोजित केलेल्या एक दिवसीय नॅशनल कॉन्फरन्स मध्ये शुगर टेक्नॉलॉजी विभागातील शिक्षकांनी वेगवेगळ्या विषयावर रिसर्च पेपर दिले.

आर.एम.पवार
शुगर टेक्नॉलॉजी विभाग

यशवंतराव चव्हाण मुक्त विद्यापीठ

आपल्या महाविद्यालयात यशवंतराव चव्हाण मुक्त विद्यापीठाचे बी.एस्सी. अभ्यासक्रमाचे अभ्यास केंद्र नियमित सुरू असून अभ्यास केंद्रात 2024-25 या शैक्षणिक वर्षामध्ये 49 विद्यार्थी संख्या होती

आर.एम.पवार
ग्रंथालय विभाग

ग्रंथालय विभाग

शैक्षणिक वर्ष 2024 -25 या शैक्षणिक वर्षात 10,000 रुपये किमतीची पुस्तके खरेदी करण्यात आली. स्पर्धा परीक्षेची पुस्तके ही आपल्या ग्रंथालयामध्ये उपलब्ध आहेत. ग्रंथालयामध्ये पुस्तकाबरोबरच E- Book, E-general वाचन साहित्यांचा समावेश आहे.

INELIBNET च्या ई जनरल ची सुविधा उपलब्ध करून देण्यात आले आहे. याचा लाभ शिक्षक व विद्यार्थी घेतात. तसेच विद्यार्थ्यांसाठी नियमित वर्तमानपत्रे व नियतकालिके उपलब्ध आहेत.

आज अखेर ग्रंथालयामध्ये 1622 पुस्तके आहेत. ग्रंथालयामध्ये स्वतंत्र अभ्यासिकेची सोय तसेच इंटरनेट सुविधा युक्त कम्प्युटर सेवा उपलब्ध केलेले आहे

ए.ए .कुंभार
ग्रंथालय विभाग

अल्कोहोल टेक्नॉलॉजी विभाग – माहिती

आमच्या कॉलेजमधील अल्कोहोल टेक्नॉलॉजी विभाग विद्यार्थ्यांना सैद्धांतिक ज्ञानासोबत व्यावहारिक अनुभव देण्यावर भर देतो. विभागामध्ये फिल्ड वर्क, उद्योग अनुभव, संशोधन आणि नवकल्पना यांना महत्त्व दिले जाते.

शैक्षणिक आणि व्यावहारिक अनुभव

- फिल्ड व्हिजिट्स: एम.एस्सी. पहिल्या वर्षातील विद्यार्थ्यांना उद्योगातील अल्कोहोल उत्पादन युनिट्स आणि फर्मेंटेशन साईट्स पाहण्यासाठी फिल्ड व्हिजिट्स दिल्या जातात. या भेटींमुळे विद्यार्थ्यांना वास्तविक प्रक्रियेचे निरीक्षण करता येते आणि औद्योगिक पातळीवरील उत्पादनाबद्दल समज मिळते.
- इम्प्लांट ट्रेनिंग: एम.एस्सी. दुसऱ्या वर्षातील विद्यार्थ्यांना उद्योगांमध्ये इम्प्लांट ट्रेनिंग दिले जाते. यामध्ये विद्यार्थ्यांना उद्योगातील कामकाज, गुणवत्ता नियंत्रण आणि प्रक्रियांचे व्यवस्थापन याचा व्यावहारिक अनुभव मिळतो.

संशोधन आणि नवकल्पना

- विभाग विद्यार्थ्यांना संशोधन व नवकल्पना स्पर्धांमध्ये सहभागी होण्यास प्रोत्साहित करतो.
- तसेच, एम.एस्सी. दुसऱ्या वर्षातील विद्यार्थ्यांना रिसर्च प्रोजेक्ट्स करण्यासाठी दिले जातात, ज्यामध्ये त्यांना स्वतंत्र संशोधन आणि प्रयोगात्मक काम करण्याची संधी मिळते.
- एम.एस्सी. पहिल्या आणि दुसऱ्या वर्षातील विद्यार्थ्यांनी शिवाजी विद्यापीठाच्या आविष्कार संशोधन स्पर्धांमध्ये भाग घेऊन आपल्या नाविन्यपूर्ण कल्पना सादर केल्या.

कार्यशाळा आणि परिषद

- विद्यार्थ्यांसाठी विभागाच्या वतीने **"Prospects of Alcohol Technology"** या विषयावर एक एकदिवसीय कार्यशाळा आयोजित केली होती. यात उद्योगातील संधी, करिअर मार्गदर्शन आणि तंत्रज्ञानातील नवीन घडामोडी यावर लक्ष केंद्रित केले गेले.
- तसेच, विद्यार्थ्यांनी **National Conference on "Future of Bioenergy, Sugar and Allied Industry"** मध्ये सहभागी होऊन जैवऊर्जा, साखर उद्योग आणि अल्कोहोल उत्पादनातील नव्या संशोधन व तंत्रज्ञानाबद्दल माहिती मिळवली.

विभागाचे ध्येय

अल्कोहोल टेक्नॉलॉजी विभागाचा उद्देश शैक्षणिक ज्ञान आणि औद्योगिक अनुभव यामध्ये समतोल साधणे हा आहे.
फिल्ड व्हिजिट्स, इम्प्लांट ट्रेनिंग, कार्यशाळा आणि संशोधन संधींच्या माध्यमातून विभाग विद्यार्थ्यांना व्यावसायिक करिअर आणि संशोधनासाठी सज्ज करतो.

शिल्पा संजय स्वामी.
अल्कोहोल टेक्नॉलॉजी विभाग..

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

Lifelong Learning and Extension Committee

Certificate Courses

Sr.No	Name of the Course	Name of the Course Coordinator	Name of the Department	Duration
1	Sugar Engineering	Mr.O.U.Patil	Engineering	1 Year
2.	DCS Operator	Mr.A.V.Magadum	Engineering	1 Year
3.	Distillery Plant Operator	Miss.M.M.Patil	Alcohol tech	1 Year

2024-2025

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

RCST

English Section

2024-2025

The Value of Failure

In academic life, success is often measured by grades, ranks, and achievements. From school to college, students are conditioned to believe that consistent success is the only path to a good future. However, what is rarely discussed is the importance of failure—and how it shapes an individual more profoundly than success ever can.

Rahul was considered a bright student throughout his school years. He consistently scored well and was always among the top performers in his class. Naturally, everyone expected him to excel in college as well. With high expectations from his family and teachers, Rahul entered engineering with confidence.

However, things did not go as planned.

In his first year, Rahul faced unexpected challenges. The subjects were more complex, the competition was tougher, and the environment was entirely new. Despite putting in effort, he failed in one of his major subjects. For the first time in his life, he experienced academic failure.

The result was not just a mark sheet with a failed subject—it was a blow to his confidence. He began doubting his abilities, comparing himself to others, and feeling left behind. The fear of judgment and disappointment weighed heavily on him.

For a while, Rahul avoided confronting the situation. But deep down, he knew that running away would not solve anything. Gradually, he decided to face his failure, not as an end, but as a learning opportunity.

He started analyzing where he went wrong—lack of conceptual understanding, poor time management, and overconfidence. Instead of blaming circumstances, he took responsibility. He changed his study methods, sought help from professors, and began practicing consistently.

More importantly, Rahul changed his perspective. He stopped seeing failure as something to be ashamed of and started viewing it as a part of growth.The next semester, he appeared for the same subject again. This time, not only did he pass, but he performed exceptionally well.

The subject that once defeated him became one of his strongest areas.Years later, when Rahul looked back, he realized that failing once had taught him lessons that no success could have. It made him resilient, disciplined, and self-aware.This story highlights an important truth—

failure is not the opposite of success; it is a part of it.For students at the graduation level, it is essential to understand that setbacks are inevitable. What truly matters is how one responds to them. Instead of fearing failure, one should embrace it as a stepping stone toward improvement.In the journey of growth, failure does not define you—your response to it does.

Ayush Kumbhare
B. Sc III

Optimization of fermentation parameters to produce wine from Dragon fruit sample using ***Saccharomyces cerevisiae*** spp"

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Abstract-

Dragon fruit grows at the *Hylocereus cactus*, additionally referred to as the Honolulu queen, whose vegetation most effective open at night. The plant is local to southern Mexico and Central America. Today, it's far grown all around the world. It is going via way of means of many names, such as pitaya, pitahaya, and strawberry pear. The maximum not unusual place sorts have brilliant purple pores and skin with inexperienced scales that resemble a dragon for this reason the name. The maximum extensively to be had range has white pulp with black seeds, alevin though a much less not unusual place kind with purple pulp and black seeds exists as well. Another range known as yellow dragon fruit has yellow pores and skin and white pulp with black seeds. This study targets to offer a top level view of the distinct species of *Saccharomyces cerevisiae,* specializing in their characteristics, taxonomic distribution and their useful function withinside the industry, particularly in terms of Dragon fruit wine manufacturing and products.

Key words- Dragon fruit sample , *Saccharomyces cerevisiae spp.* Sugar .

Introduction –

Dragon fruit (*Hylocerus undatus*), brought as a brand new crop in low rainfall region and rocky barren land, is gaining speedy reputation among farmers. It is a nutritious fruit with plenty of makes use of as pulp, which represent 70-80% of the ripe fruit. Dragon fruit is especially to be had in 3 versions viz., crimson pores and skin with white pulp (*Hylocereus undatus*), crimson pores and skin with crimson pulp (*Hylocereus monacanthus* formerly referred to as *H. polyrhizus*) and yellow pores and skin with white pulp (*Hylocereus megalanthus* formerly referred to as *Selenicereus megalanthus*). The redfleshed styles of dragon fruit are especially wealthy in antioxidants. It is understood to save you colon cancer, diabetes and neutralizes poisonous materials along with heavy metals; lessen ldl cholesterol and excessive blood pressure. It is wealthy in nutrition C, phosphorus and calcium. The flavour of the fruit resembles to kiwi fruit. Fruits are low in fats and wealthy in minerals with the most suitable Brix fee of 15-180Bx. It is extensively used as fruit salad in big name inns and restaurants. It may be processed to variety of commercial merchandise along with juice, jam, syrup, ice cream, yogurt, jelly, preserve, sweet and pastries. The crimson and crimson pulp of dragon fruit is used for extraction of herbal colours. The flower buds of dragon fruit are used to make soups or jumbled together salads. This bulletin gift the botanical characteristics; dietary and health; financial and social importance; cultural practices and financial evaluation of dragon fruit cultivation in India.

Botanical Speciality of dragon fruit Some of the botanical traits of the plant are referred to below.

Hylocereus undatus is a mountain climbing vine cactus species of the own circle of relatives Cactaceae. It is is a quick growing, epiphytic or xerophytic.

It is certainly considered one among 15 widely wide-spread *Hylocereus* species. While lots of those have decorative price due to their flowers, handiest 5 are essential as fruit producers.

Common names such as `dragon fruit', 'pitaya' and 'pitahaya' are general terms, which encompass numerous species of columnar and mountain climbing cacti. They are regularly implemented to species aside from H. *undatus* too and commonly consult with the end result in preference to the plant.

*It is taken into consideration local to southern Mexico, the Pacific coast of Guatemala, Costa Rica, and El Salvador. It is now commercially cultivated and extensively disbursed during the tropics and a few temperate regions.

*Stems are triangular, three-sided, despite the fact that occasionally 4- or 5-sided, green, fleshy, jointed, many branched. Each stem phase has three flat wavy ribs and corneous margins can be spineless or have 1-three small spines.

*Stems scandent, creeping, sprawling or clambering, up to ten m long. Aerial roots, which can be capable of take in water, are produced on the bottom of stems and offer anchorage for stems on vertical surfaces.

*Flowers are 25-30 cm long, 15-17 cm wide, nocturnal, scented and hermaphroditic; however, a few cultivars are self-compatible. Dragon fruit contains several types of antioxidants. It is low sugar fruit but hazardous heath effect on human being so using for wine production.

Material & Methods

The dragon fruit', or '*pitaya*' and 'pitahaya' sample for dragon wine production were obtained from coastal region of Maharashtra .The freshly trapped dragon samples were collected in wash with water sterile .cutt into small pices crushed it prepaed the juice constration .juice sampling teste Ph of sample was determine at sampling sites using a portable Ph meter . to check juice acidity and suagr %

1)Sample collection:

Soil sample was collected from Sakharale Tal-Walwa ,Dist -Sangli, farming soil collected in sterile container (Daniel *et al*.2021).

2) Enrichment of sample:

soil sample was enriched by Malt glucose yeast and peptone Broth In 1week incubation period at a 30°©room temperature. .(Daniel *et al*.2021).

3) Isolation method:

Isolation of microorganisms from soil.it was along enriched sample and spread on MGYP Agar plates Agar plates and incubate at room temperature for 2 to 3 days. (W Scharf *et al*. 2013).

4.Selection of Microorganism –

In dragon fruit' sample near about 12-16.5% suagr is present in the from sucrose this sugar get fermentated into sacchromyces cervies and convert to alcohol. The selection of a good yeast strain having desirable properties is a prerequisite for the quality wine production (Degree, 1993).

5.Maintain Parameter –

Brix of toddy is 18-19^{0}bx ,ph is t dragon fruit' sample for wine production to maintain 4.0-4.5 and tempreture is 20-22^{0}c

6.Fermentation –

Carried out the fermentation with adding 5% ***Saccharomyces cerevisiae*** and at 20-22^{0}continuase monitring system. submerged fermentation were studied.

7. **Racking –**

Racking is the process of siphoning the wine into a new,clean barrel. Racking allows clarification and aids instabilization. Wine that is allowed to age on the lees oftendevelops "off-tastes". A racking hose

or tubing is used and can be attached to a racking cone to make this task easier. The racking process is repeated several times during the aging of wine. Repeated racking produces the clarity required in wine, especially if it is aged in a barrel (Robinson, 2003).

8. **Ageing-**

The ageing of wine and its ability to potentially improve wine quality for its consumption, is one of the most important step after wine production (Robinson, 2006). The ratio of sugars, acids and phenolics to water is a key determination of how well a wine can be age.

9.Sensory evaluation

The sensory analysis of wine is an important parameter indetermining the quality of wines. It revolves around the taste, feel, aroma and bouquet of the aged wine..

8.Wine quality parameters –

1.Determination of sugar content –

The refractometer was used to determine sugar content of wine. The refractometer was thermostatic at 20^0c and calibrated with distilled water. Then the wine sample apply evenly onto the surface of the prism and the refractive index was read after 2 min. The sugar content was determined in each measurement was repeated twice. (Nikola *et al*.,2019)

2.Determination of pH -

pH is measured by using pH meter calibrated with pH 4 and pH 7.

3.Determination of specific gravity -

Weight of empty specific gravity bottle was taken with the help of electronic balance

Where,

A = weight in gm of specific gravity bottle with wine sample.

B = weight in gm of specific gravity bottle

C = weight in gm of specific gravity bottle with water.

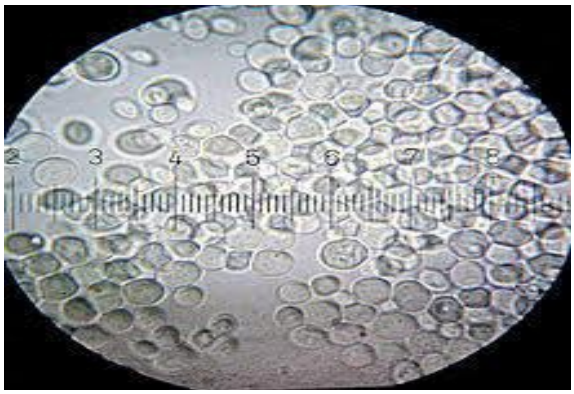
5.Colour – Colour of the wine was determined by visual observations.

6.Aroma – Aroma of the wine was determined by smelling.

7.Taste – Taste of the wine was determined by mouth feeling

Result and dissusion -

After incubation to check the staining ,biochemical and marphological characterization.and identified as ***Saccharomyces cerevisiae*** was Acid production, Galactose Mannitol test were negative and Urease Glucose ,Raffinose ,Sucrose ,Lactose ,Maltose according to the standard guidelines of Bergey's manual of Determinative Bacteriology volume I



Gram staining of Saccharomyces cerevisiae

Fungal strain	S1
Acid production	-
Urease	+
Glucose	+
Raffinose	+
Galactose	-
Sucrose	+
Mannitol	-
Lactose	+
Maltose	+

Biochemical test of isolates

Result of determination of specific gravity –

Specific gravity of palm wine Specific gravity was found in range of 0.98 – 1.04

Wine	Isolatecode	Weight of wine	Specific gravity
dragon fruit wine	SI	50.309	0.98

Determination of sugar content of wine by using refractometer -

Sugar content of wine after fermentation and before fermentation was determined by using refractometer which shows results such as sugar content after fermentation is less than that of before fermentation that means yeast convert sugar into alcohol and carbon-dioxide as a by product.

Wine	Isolatecode	Sugar content of fruit juice	Sugar content of juice after fermentation
dragon fruit wine	SI	17%	9%

Determination of pH by using pH meter -

Wine	Isolatecode	pH of fruit juice	Sugar content of pH juice after fermentation
dragon fruit wine	SI	4.5%	2.9%

5.Colour –

Whitish Red Colour of the dragon fruit' wine.

6.Aroma –

Aroma of the dragon fruit' wine was pleasant & Alcoholic.

7.Taste –

dragon fruit' test is sweet and alcoholic.

Conclusions

The study is investigated that showed that dragon fruit' wine is efficient in reducing disease risk have been performed on rats and not humans. In addition, there are hardly any properly controlled study on humans to demonstrate the nutritional benefit of the drink. Furthermore, there is no consistency in the literature on the concentration of the drink that is beneficial. This may be because the water abundance of the drink varies from location to location and so the actual concentration of palm wine that will facilitate functional benefits is unknown. From currently available data, the evidence that supports palm wine as a multifunctional beverage in humans is weak and needs further research. However, microorganisms and chemical elements and compounds that support nutritional, health and reduction of disease risk in well-known functional foods and beverages are present in dragon fruit' wine.

Refernces –

1.Ahmad I, Jha YK, Anurag RK (2009). Optimization of enzymic extraction process for higher yield and clarity of guava juice. J. Food Sci. Technol., 46: 307-311.

2. Alobo AP, Offonry SU (2009). Characteristics of coloured wine produced from Roselle (Hibiscus sabdariffa) calyx extract. J. Inst. Brew., 115: 91-94.

3. Amerine MA, Roessler EB (1976). Wines: Their Sensory Evaluation,M.A. Amerine and E.B. Roessler (Eds.), W.H. Freeman & Co., New York.
4. Archana A, Siddiqui S (2004). Biochemical changes in guava fruits under various modified conditions. Haryana J. Hort. Sci., 33: 209-212.
5. "Hylocereus undatus(dragon fruit)". Invasive Species Compendium. CABI *(Centre for Agriculture and Bioscience International). 3 January 2018. Retrieved 19 April 2018.*
6.Jump up to:a b c d e f *Morton, J.F. (1987).* Fruits of warm climates. West Lafayette, Indiana, *USA: Center for New Crops & Plant Products, Department of Horticulture and Landscape Architecture,* Purdue University. *pp. 347–348.* Archived *from the original on 5 May 2016. Retrieved 8 April 2016.*
7.Jump up to:a b c *Janick, Jules; Paull, Robert E., eds. (2008).* "C". *The Encyclopedia of Fruit and Nuts.* Cambridge, United Kingdom*:* CABI *(Centre for Agriculture and Bioscience International). pp. 215–216, 222–226.* ISBN 978-0-85199-638-7
8. "Dragon fruit". Merriam-Webster Dictionary. *2019. Retrieved 25 March 2019.*^ *Menon, Jayant; Roth, Vathana (21 June 2022).* Agricultural Trade between China and the Greater Mekong Subregion Countries: A Value Chain Analysis. *ISEAS-Yusof Ishak Institute.* ISBN 978-981-5011-13-5.

A STUDY ON IMPACT OF GREEN MARKETING STRATEGIES ADOPTED BY DAIRY INDUSTRIES IN SANGLI AND KOLHAPUR DISTRICTS

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Abstract:

Green marketing has emerged as a crucial strategy for businesses striving for sustainability while meeting consumer demands for eco-friendly products. The dairy industry, a significant contributor to the economy of Sangli and Kolhapur districts, is increasingly adopting green marketing strategies to enhance environmental sustainability, improve brand reputation, and comply with regulatory requirements. This study explores the impact of green marketing strategies implemented by dairy industries in these districts, focusing on key initiatives such as eco-friendly packaging, organic dairy production, energy-efficient processes, waste management, and sustainable sourcing.

The research employs a mixed-method approach, incorporating surveys and interviews with dairy industry stakeholders, including producers, consumers, and policymakers. The findings highlight the effectiveness of green marketing in enhancing consumer trust, driving competitive advantage, and fostering environmental responsibility. However, challenges such as high implementation costs, lack of consumer awareness, and infrastructural limitations are also identified.

The study concludes that while green marketing presents significant benefits for the dairy sector, a strategic approach involving government support, technological advancements, and consumer education is necessary for its successful adoption. The insights gained can help dairy

businesses in Sangli and Kolhapur develop more effective and sustainable marketing strategies to align with global environmental trends.

Keywords Green Marketing, Dairy Industry, Sustainability, Consumer Awareness, Eco-Friendly Practices

1. INTRODUCTION

Most of the customers are transforming their purchasing willingness for green products, which are eco-friendly, and healthy for society, human being and family members. Green Marketing is the marketing of products that are presumed to be environmentally safe, that means it refers to the process of selling products and services based on their environmental benefits. Now a day's purchase behavior also depends upon the sales promotion strategies. Customers are attracted by various companies by glamorous advertisements, policies provided by seller, discount policies etc.

India has been leading producer and consumer of dairy products across the globe with consistent growth in the production of dairy products. Activities related to Dairy productions are one of the important bases of Indian Rural Economy, which is delivering as an important source of income and employment. On the other hand, India is the largest country in the world, the demand of the dairy produce is also high. As compared to other dairy producers in the world, the milk production per animal is considerably low. Furthermore, almost every dairy produce in India is domestically consumed and out of which fluid milk is sold majorly. As the country is accounting for more than 13% of the world's total milk production, it is world's largest consumers of milk and milk products which is consuming almost 100% of its own milk production, have many challenges and opportunities in India as well as global Dairy Industry.

2. RESEARCH PURPOSE

There are needs of Green Products consumption especially in fast-moving consumer goods, like vegetables, grocery, milk etc. The present study will focus on analyzing existing green marketing strategies & impact on purchase behavior of new and existing customers. The study will be beneficial to the milk industry and society because it helps to create awareness about the concept of green milk products and green marketing.

3. STATEMENT OF THE RESEARCH PROBLEM

The dairy industry is one of the most rapidly expanding sub sectors in India. Due to this rapid expansion of the dairy sector, all the dairy firms in the industry need to develop and implement sound and competitive green marketing strategies in order to guarantee acceptable performance in the competitive environment. To consolidate its operations and strength in the market, green marketing strategies are adopted by this industry. The expansion of current green marketing practices requires the involvement of microfinance to these industries. The performance of green marketing is largely dependent on strategic practices. Minimal information exists on how market forces affect performance of dairy

Industries in India. In addition, previous studies have focused on description only while this study was analytical to look at relationships between variables. It is in this view that this study aimed to assess the influence of green marketing strategies on performance of dairy industries in Sangli and Kolhapur Districts of Maharashtra State. Considering this researcher has selected the topic entitled "A Study on Impact of Green Marketing Strategies Adopted by Dairy Industries in Sangli and Kolhapur Districts"

4. OBJECTIVES OF THE STUDY

1. To study the current scenario of green marketing strategies adopted by Dairy Industries in Sangli and Kolhapur districts.
2. To study the problems faced by dairy industries in the adoption of green marketing strategies.
3. To find out the commonly adopted green marketing strategies and analyzing impact on dairy industries in Sangli and Kolhapur districts.
4. To study the Factors influencing to purchase green milk products

5. RESEARCH METHODOLOGY

Research Design

The research design is descriptive. The major purpose of descriptive research is a description of the state of affairs as it exists at present. The study involved describing the current practice which is adopted by milk processing units, green marketing strategies and to identify consumer attributes, factors of buying decision making, consumers' market awareness of milk processing units.

Data Collection- Appropriate Date was collected at two different levels. 1) Domestic Milk processing units 2) Customers

Secondary data was collected from the publications, articles, previous study done by the researcher, internet search, and concerned research institutions of Milk processing Industry. Various books on marketing strategies were referred for studying the contents of the subjects. Government rules regarding waste management and recycling norms for sustainable development from the website were referred to understand green management.

Research Area: The study is related to milk processing units in Sangli and Kolhapur districts in Maharashtra state. Sangli and Kolhapur districts were selected as they are the biggest districts geographical area wise having most of the milk processing units in operations in Maharashtra state.

Sample Size			
Sangli District	**Talukas**	**Milk Processing Units**	**Customers**
	10	30	300
Kolhapur District	**Talukas**	**Milk Processing Units**	**Customers**
	12	30	300

Sample Size: 600 Customers has selected based on Tarrows Formula as well as 60 Milk Processing Unit has selected based on Statistical Calculator.

Sampling method- Non-Probability convenience sampling opted for the survey. This method attempts to obtain a sample of the convenient end-user of milk products, Manufacture of milk products who are ready to give information.

Statistical tools

The simple statistical tools like frequencies, tabulation, percentages, averages etc. were used as per the requirement of the data for analyzing the data. Suitable statistical tools have been used to draw inferences using Statistical Package for Social Sciences (SPSS). The statistical test used for testing hypothesis

6. SCOPE OF THE STUDY

The researcher has restricted the scope of the study as per following:-

Geographical Scope: Sangli and Kolhapur Districts.

Temporal Scope: For the purpose of data collection and study, mainly the duration of 2021-2025 (i.e. 4 years) will be considered.

Topical Scope: A Study on Impact of Green Marketing Strategies Adopted by Dairy Industries in Sangli and Kolhapur Districts

Analytical scope: Fulfillment of objectives.

Functional scope: Meaningful suggestions for improvement in Green Marketing Strategies of dairy industry in the sample area.

7. HYPOTHESIS OF THE STUDY

Hypothesis 1: The growth of dairy industries in the Sangli and Kolhapur districts is influenced by adopting green marketing strategies.

Ho: The growth of dairy industries in the Sangli and Kolhapur districts is not influenced by adopting green marketing strategies.

H1: The growth of dairy industries in the Sangli and Kolhapur districts is influenced by adopting green marketing strategies.

State Factors influencing Dairy Industry Unit to adopt green marketing on the scale of following points (Please √)

Strongly Agree (SA), Agree (A), Not Agree (NA), Disagree (D), Strongly Disagree (SD)

Sr. No	Statement	SA	A	N	D	SD
1	Protecting environment is our responsibility	22	20	10	5	3
2	Environmental laws, rules and regulations have lead Companies to develop eco-friendly products.	20	22	12	4	2

3	Majority of our competitors are involved in green marketing	**18**	**16**	**14**	**8**	**4**
4	Green marketing gives competitive advantage	**16**	**18**	**12**	**10**	**4**
5	To satisfy our customers green marketing is important	**20**	**20**	**14**	**4**	**2**
6	Good demand for green product is noticed in recent past	**16**	**18**	**12**	**10**	**4**
7	Consumers are satisfied after purchasing green products	**20**	**22**	**12**	**4**	**2**
8	Green products and services reduce cost in long run	**18**	**16**	**14**	**8**	**4**
9	Eco-friendly products are beneficial for consumers.	**16**	**18**	**12**	**10**	**4**
10	Governmental pressure has led to development of sustainable products	**20**	**22**	**12**	**4**	**2**

H_0: Proportion of Factors influence is equal to population proportion.

H_1: Proportion of Factors influence is greater than population proportion.

For calculation of P^

P^= MI+ I / Number of Responses

P^=186+192 /600(10*60)

P^=0.63

Here, Proportion of influenced consumers ($\hat{P}$) = 0.63

Population proportion (P) = 0.5

$$H_0: \hat{P} = 0.5$$

V/s

$$H_1: \hat{P} > 0.5$$

Then, above hypothesis can be tested by using 'Single sample test' for proportion based on normal distribution

Test Statistic:

$$Z = \frac{\hat{P} - P}{\sqrt{\frac{P.Q}{N}}}$$

$$= \frac{0.63 - 0.5}{\sqrt{\frac{0.5 * 0.5}{600}}}$$

$$= \frac{0.13}{\sqrt{\frac{0.25}{600}}}$$

$$= \frac{0.13}{0.020}$$

Z = 6.5

As H_1 is right-sided in the given hypothesis, applying right tailed test for determining the rejection region at 5 Percentage level which comes to as under, using normal curve area table;

$$R: |z| > 1.645$$

The observed value of z is 6.5 which come in the rejection region since $R: |z| > 1.645$ and thus, H_0 is rejected in favor of H_1. Accordingly, Researcher narrated that the given figures confirm the hypothesis $\hat{P} > P$.

Hypothesis 2: There is a significant impact of green marketing strategies on the buying behavior of dairy product consumers.

H0: There is no significant impact of green marketing strategies on the buying behavior of dairy product consumers.

H1: There is a significant impact of green marketing strategies on the buying behavior of dairy product consumers.

Table Showing Factors influencing to purchase green milk products

State agreement or disagreement with each of the statements on a five point scale as given below:

SA = strongly agree, A = agree, N = Neutral, D = disagree, SD = disagree

Sr. No.	Statements	SA	A	N	D	SD
1	Awareness of green durable products	232	180	110	60	18
2	Shielding environment is our responsibility	218	192	112	55	23
3	Green products are expensive	240	180	120	60	08
4	Purchasing green durables will protect our environment	232	168	108	72	10
5	Green products are available easily	238	162	108	60	12
6	The dealers persuade customers to purchase green products	230	156	120	72	08
7	Price of green product is the first thing I look into before taking decision to purchase it.	240	162	108	84	08
8	Before buying green products I compare its price with traditional products.	230	180	120	84	10
9	Dealers play important role in purchase of green products	232	180	108	78	12
10	I use green products because my friends and colleagues use the same.	222	192	108	72	10
11	Promotion of green product helps in purchasing green products	244	180	120	60	08
12	I seek the help of retail staff to explain me information regarding its contents and benefits of the green product.	240	168	108	72	06
13	I use green products because I want to protect my family members from serious ailments.	242	162	108	60	08
14	I use green products because I want to avoid my family members from harmful product.	230	180	102	84	06

H_0: Proportion ofactors influenceis equal to population proportion.

H_1: Proportion ofactors influenceis greater than population proportion.

For calculation of P^

P^= MI+ I / Number of Responses

P^=3270+2442 /8400 (14*600)

P^=0.68

Here, Proportion of influenced consumers ($\hat{P}$) = 0.68

Population proportion (P) = 0.5

$$H_{0:}\ \hat{P} = 0.5$$

V/s

$$H_{1:}\ \hat{P} > 0.5$$

Then, above hypothesis can be tested by using 'Single sample test' for proportion based on normal distribution

Test Statistic:

$$Z = \frac{\hat{P} - P}{\sqrt{\frac{P.Q}{N}}}$$

$$= \frac{0.68 - 0.5}{\sqrt{\frac{0.5 * 0.5}{8400}}}$$

$$= \frac{0.18}{\sqrt{0.25}}$$

$$= \frac{8400}{0.18} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad \frac{}{0.0054}$$

Z = 33.33

As H_1 is right-sided in the given hypothesis, applying right tailed test for determining the rejection region at 5 Percentage level which comes to as under, using normal curve area table;

$$R: \backslash z \backslash > 1.645$$

The observed value of z is 33.33 which come in the rejection region since R: \ z \ > 1.645 and thus, H_0 is rejected in favor of H_1. Accordingly, Researcher narrated that the given figures confirm the hypothesis $\hat{P} > P$.

8. SUMMARY OF MAJOR FINDINGS

1. It is found that majority of competitors are involved in green marketing
2. It is found that Consumers are satisfied after purchasing green products
3. It is found that Eco-friendly products are beneficial for consumers.
4. It is found that Manufacturing green product is regarded as noble
5. It is found that Promotion of green product helps in purchasing green products
6. It is found that majority of customers are aware of green durable products
7. It is found that majority of customers want to protect family members from serious ailments.

9. SUGGESTIONS

1. It is suggested that Milk processing unit should focus on competitors green marketing strategies to develop some unique strategy.
2. It is suggested that Milk processing unit organize some camp in rural area so that customers are more aware about green product.

3. It is suggested that Milk processing unit should more focus on promotional activities of green product.

10. CONCLUSION:

It is concluded that majority of competitors are involved in green marketing, Consumers are satisfied after purchasing green products, Promotion of green product helps in purchasing green products, customers are aware of green durable products .

It is concluded that lots of factors which effect on buying capacity of customers to protect their families from hazardous activities. It is also concluded that having positive impact of green marketing strategies adopted by Milk Processing Unit.

11. LIMITATIONS OF RESEARCH

1. The present study is conducted in Sangli and Kolhapur districts parts of Maharashtra state only; result and conclusion may not be the same in other districts of the same state.

12. REFERENCES

1. Kothari C.R. -„Research Methodology Methods and Techniques", 2nd Edition (2006), New Age International Publishers.

2. Philip Kotler -„Marketing Management" 13th edition, (2009), Pearson Prentice Hall Journals and Research Papers

3. Michael Jay Polonsky & Philip J. Rosenberger - Re-evaluating Green Marketing: A Strategic Approach, Business Horizons, September-October - 2001

4. International Journal of Management and Commerce Innovations, (ISSN: 2348 - 7585) Vol.-2, Issue 1, P.P. – (61-70), Month: April 2014 – Sept. – 2014

WEBSITES

1. Shodhganga.inflibnet.ac.in

2. www.google .com

3. En.wikipedia.org

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Remarks

1) Title of the paper should be above the name of authors.

2) Write the abstract of the paper.

Use of Artificial Intelligence in Indian Sugar Industry

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Abstract

Artificial Intelligence (AI) is revolutionizing the sugar industry by enhancing various aspects like sugarcane cultivation and harvesting, processing andensuring quality production, sustainability in business and policy contexts.The integration of AI technologies, such as machine learning and computer vision, offers significant improvements in crop management and operational efficiency and economic sustainability

AI technology have ability to analyze vast amounts of data from weather patterns, soil quality and disease incidence allows for the creation of predictive models that optimize technology can be used mitigate risks associated with unpredictable weather events, pest invasions, and disease outbreaks. Moreover, AI facilitates early disease detection by identifying symptoms before they become visible to the human eye, thus enabling timely interventions.

AI technology can be used to improve quality of sugar by monitoring production process, detecting impurities through automatic visual inspection and optimizing process parameter at every stage by proper automation

AI technology also supports decision-making in sugar mills by providing predictive insights, which enhance operational efficiency and productivity. AI technology helps Government for fixing FRP of cane minimum price of sugar.

AI APPLICATION IN SUGARCANE CULTIVATIONAND HARVESTING

AI applications in sugarcane cultivation are transforming traditional farming practices by introducing precision agriculture techniques. Here are some key areas where AI is making a significant impact.

1. **Crop Monitoring and Management:** AI-powered satellite imagery is used to monitor sugarcane fields. These technologies provide real-time data on crop health, growth stages, and potential issues such as pest infestations or nutrient deficiencies. Machine learning algorithms analyze

this data to offer actionable insights, helping farmers make informed decisions about irrigation, fertilization, and pest control

2. **Crop yield and analytic control**—AI models predict optimal planting and harvesting times by analyzing historical weather data, soil conditions, and crop performance. This helps in maximizing yield and reducing losses due to adverse weather conditions. Predictive analytics also assist in forecasting market demand and prices, enabling farmers to plan their production and sales strategies more effectively.
3. **Disease Detection and Management**—AI systems can detect early signs of diseases in sugarcane crops through image recognition and pattern analysis. By identifying symptoms that are not visible to the naked eye, AI enables early intervention, reducing the spread of diseases and minimizing crop damage. This is particularly useful for managing common sugarcane diseases like red rot and smut.
4. **Automated Irrigation Systems**—AI-driven irrigation systems use sensors to monitor soil moisture levels and weather forecasts to optimize water usage. These systems ensure that crops receive the right amount of water at the right time, improving water efficiency and reducing waste. This is crucial in regions where water scarcity is a concern.
5. **Precision Fertilization**—AI helps in determining the precise amount and type of fertilizers needed for different parts of the field. By analyzing soil samples and crop requirements, AI ensures that nutrients are applied efficiently, promoting healthy crop growth and reducing environmental impact.
6. **Supply Chain Optimization**—AI optimizes the supply chain by predicting demand, managing inventory, and scheduling transportation. This reduces wastage, ensures timely delivery of produce, and enhances overall efficiency in the sugarcane supply chain.
7. **Sugar Factory Operations**—Accurate estimation of cane availability helps sugar factories plan their operations efficiently. AI models analyze data from satellite imagery, weather patterns, and historical crop performance to predict the amount of sugarcane that will be harvested. This enables factories to optimize their processing schedules, reduce downtime, and ensure a steady supply of raw material1.
8. **Production Estimates**—AI-driven yield prediction models use machine learning algorithms to forecast sugarcane production. These models consider factors such as soil quality, weather conditions, and crop

management practices. Accurate production estimates help in planning the logistics of harvesting, transportation, and storage, ensuring that resources are used efficiently

.Implementing these AI applications requires investment in technology and training for farmers, but the benefits in terms of increased productivity, sustainability, and profitability are substantial.

AI APPLICATION IN OPERTING SYSTEM AND QUALITY ASSURANCE

AI can significantly enhance the efficiency and productivity of sugar factories by optimizing Standard Operating Procedures (SOPs) across various sections. Here's how AI can be useful.

1. **Data Integration and Analysis:** AI systems can integrate data from various sources such as sensors, historical records, and real-time monitoring systems. By analyzing this data, AI can identify patterns and inefficiencies in current SOPs, suggesting improvements that enhance productivity and reduce costs.
2. **Predictive Maintenance:** AI-driven predictive maintenance helps in identifying potential equipment failures before they occur. By analyzing data from machinery, AI can predict when maintenance is needed, preventing unexpected breakdowns and reducing downtime. This ensures that all sections of the factory operate smoothly and efficiently.
3. **Sugar cane quality prediction:** AI can analyses data like climatic conduction ,soil conduction and satellite imagery to predict the quality of sugar cane before harvesting and allowing better crop management and optimal harvesting time
4. **Process Optimization:** AI can optimize processes by continuously monitoring and adjusting parameters to maintain optimal conditions. For example, in the milling section, AI can adjust the speed and pressure to maximize sugar extraction while minimizing energy use. This leads to higher yields and lower production costs.

   AI can also analyses data from entire production process like clarification, evaporation and crystallization to identify area of improvement and optimizes refinery process for quality of sugar

5. **Quality Control**—AI systems can enhance quality control by using machine learning algorithms to detect anomalies in the production process. By identifying deviations from the standard quality parameters, AI ensures that the final product meets the required standards, reducing waste and rework. AI can monitor continuous process parameter like temperature,. pressure and vacuum and allow intermediate adjustments to maintain quality of sugar
6. **Visual inspection**—AI powered computer vision system can be analyze sugar sample to identify defect and impurities that might missed by human inspection providing more through quality assurance
7. **Traceability**;AI can track each batch from raw material to finish product and allowing for better quality control and identifications of potential issue within the production chain .
8. **Energy Management**—AI optimizes energy use by monitoring consumption patterns and adjusting operations to reduce energy waste. For instance, AI can schedule high-energy-consuming processes during off-peak hours when energy costs are lower, leading to significant cost savings.
9. **Training and Skill Development**—AI can be used to develop training programs for factory workers, ensuring they are well-versed in the latest SOPs and best practices. By providing personalized training based on individual performance data, AI helps in enhancing the skills of the workforce, leading to better productivity.
10. **Regulatory Compliance**—AI helps in ensuring compliance with regulatory standards by continuously monitoring processes and generating reports. This reduces the risk of non-compliance and associated penalties, ensuring smooth operations.
11. **Real-Time Decision Making**—AI provides real-time insights and recommendations, enabling managers to make informed decisions quickly. This agility helps in addressing issues promptly and maintaining optimal production levels.
12. **Cost Reduction**—By optimizing processes, reducing downtime, improving quality control, and managing energy use, AI significantly reduces the overall cost of production. These savings can be reinvested in further improving factory operations and achieving better productivity.

By Implementing AI in sugar factories it will be easier to achieve the long-term benefits in terms of efficiency, and increased productivity which in turn contribute to a more sustainable and profitable industry.

AI APPLICATION IN SUGAR POLICY MAKAR

1. **Government Decisions on Sugar Consumption**– Governments rely on accurate data to make decisions about sugar consumption and policy-making. AI provides reliable estimates of sugarcane production, which helps in setting quotas, determining subsidies, and planning for public distribution systems. This ensures that there is enough sugar to meet domestic demand without causing shortages or surpluses.

1. **Import/Export Planning**– AI helps in forecasting the surplus or deficit of sugarcane production, which is critical for making import/export decisions. By predicting the amount of sugarcane available, governments and industry stakeholders can plan for international trade, ensuring that the country meets its export commitments and imports only when necessary.
2. **Ethanol Blending Program (EBP)**– The Ethanol Blending Program aims to blend ethanol with petrol to reduce carbon emissions and dependence on fossil fuels. Accurate estimation of cane availability is vital for this program, as it determines the amount of sugarcane that can be diverted for ethanol production. AI models help in balancing the needs of sugar production and ethanol blending, ensuring that both sectors are adequately supplied.
3. **Production planning for raw and white sugar**– AI technology predict international price of white and raw sugar and according surplus cane is diverted
4. **Taxation and Revenue Planning**– Governments use production estimates to plan taxation and revenue collection. Accurate data on sugarcane production helps in setting appropriate tax rates and ensuring that the industry contributes fairly to the economy. AI-driven predictions provide a reliable basis for these financial decisions
5. **FRP ofcane and market price of sugar**– The Fair and Remunerative piece of sugar cane is minimum price that sugar mill can pay to farmers within 15 day. The FRP is based on production cost ,recovery rate and

market price of sugar AI technology can provide data more precisely to determine above.

6. **Sustainability and Environmental Impact**– AI contributes to sustainable farming practices by optimizing resource use and reducing environmental impact. Accurate predictions of cane availability help in planning crop rotations, managing soil health, and reducing the use of chemical inputs. This promotes sustainable agriculture and helps in meeting environmental regulations

By leveraging AI, the sugar industry can make more informed decisions, improve operational efficiency, and contribute to economic growth.

Conclusion

In conclusion, the integration of Artificial Intelligence in the sugar industry marks a transformative step towards achieving sustainability and enhancing productivity. By leveraging AI technologies, the industry can optimize resource use, improve crop yields, and ensure consistent product quality. The adoption of AI in the sugar industry is not just a technological upgrade; it is a strategic move towards a sustainable and economically robust global presence. The feature of AI in sugar industry looks very bright.

However AI cannot be the sole solution to all problem that sugar industry is facing, the biggest challenges is adaptation and implication. We believed with proper planning, awareness, education and execution AI has power to transform Indian sugar industry and make it more competitive in the global market.

Possibilities of Artificial Intelligence in Ethanol industries

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ABSTRACT

India is the largest sugar producing country in the world and ethanol blending with petrol the latest trends in sugar industries. Robust growth in the sugar and ethanol industry paved way for green energy solution for restricting environmental deterioration. More than 750 sugar industries and 1000 distilleries are involved in sugar and ethanol production to meet E20 ethanol program in India to be successful in 2025. In latest trend, possibilities of Artificial intelligence in ethanol industry is very essential to improve the fermentation and distillation efficiencies and supply chain management. In this article details study have been made to introduce Artificial intelligence in all possible ways to explore the industry growth to international standards. Artificial intelligence has already been food and beverage industries to provide good recipes to attract the consumers. Especially in ethanol industry, Artificial intelligence definitely improve the fermentation process optimization, quality control, environmental management, energy management, supply chain management, data analysis, and reporting etc. Various factors have been studied to introduce Artificial intelligence in ethanol industry in near future.

INTRODUCTION

Indian ethanol industry is currently playing crucial role in protecting environmental degradation by introducing green energy with petrol which avoids global warming. In India, National biofuel Policy 2018 introduced 10 % ethanol blending target in 2022 and 20% target in 2030. Government of India has introduced Interest subvention scheme to support the sugar industries for new ethanol industry would encash 6% interest for 5 years. More than 200- 300 new sugar industries are upcoming with new ethanol plant and ethanol production have been improved. Ethanol blending rate in 2013 was in 1.3% increased to 10% in 2022. Further National Biofuel policy 2018 have been amended and ethanol blending target has been advanced to 20% by 2025. For this government has relaxed the sugar diversion for ethanol production by permitting B -heavy, sugarcane juice, sugar syrup and raw sugar can be used as feedstock for ethanol production. Since the sugarcane cultivation is facing shortage of sugarcane cultivation, grain alcohol has been introduced and more than 450 new grain ethanol units are upcoming to meet the ethanol requirement for ethanol blending program. To meet 20% ethanol blending more than 1000 crore liters of ethanol to be supplied for ethanol programme. In 2023, more than 650 crore liters of ethanol has been produced and supplied it to Oil Marketing companies and 10% target have been achieved in November 2022. Later 20% ethanol blending has been introduced by government of India and the program under operation at national level. To meet this requirement more than 450 ethanol plants are upcoming and commercial production has been started one by one.

Artificial Intelligence approach in Ethanol industries:

Ethanol fuel production from biomass is a complex process known challenges in the area of

handling, optimizing and future forecasting. The existence of modelling techniques like artificial intelligence is therefore, necessary in the design, handling and optimization of bio-ethanol production.

How is AI used in fermentation?

AI cane be used to monitor and control the temperature and humidity levels during fermentation, ensuring that the process is an energy-efficient as possible. Additionally, AI can be used to predict the optimal use of raw materials, reducing waste and ensuring that resources are used efficiently

Current trends and future prospects:

One of the primary applications of Artificial intelligence (AI) in fermentation science is the optimization of fermentation processes. Traditionally, the fermentation process has been monitored and controlled by skilled technicians who rely on their experience and intuition to make adjustments. However, AI can now be used to analyze vast amounts of data generated during the fermentation process. Such as temperature, pH and nutrient levels to identify patterns and correlations that can be used to optimize the process. By using machine learning algorithms. AI can predict the optimal conditions for fermentation, allowing for better control of the process and resulting in higher quality products. Artificial Intelligence (AI) is making an impact in fermentation for the development of new strains of yeast. Yeast plays a vital role in the fermentation by synthesizing alcohol and the selection of the right strain can significantly affect the final products taste, texture and nutritional value. AI used to analyze the genetic information of yeast cells and predict their behavior during fermentation. AI can help to minimize the resources requirements by optimizing the fermentation process. AI can also predict the optimal use of raw materials reducing unfermentable sugars etc. The potential benefit of AI in fermentation are not limited to the production of ethanol. The application of artificial intelligence in ethanol fermentation is an existing and rapidly evolving field with the potential to revolutionary in the bio-ethanol industry.

Artificial Intelligence (AI) in Molasses and Grain based ethanol industry:

The introduction of AI in the molasses and grain-based ethanol industry has brought about significant advancements in various areas. There are some key applications.

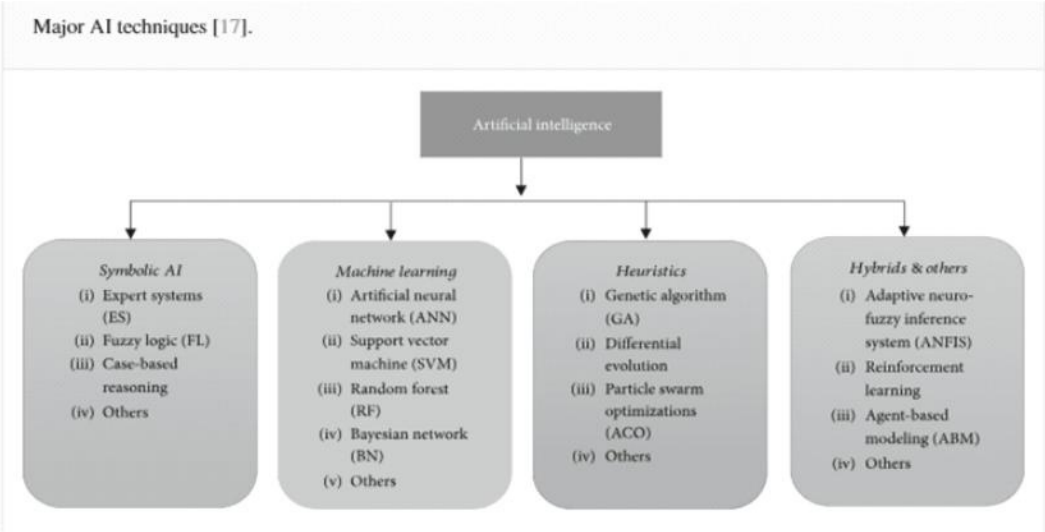
1. Process optimization: Artificial intelligence algorithms can analyze process data to optimize fermentation and distillation processes, improving ethanol yield and quality
2. Predictive maintenance: AI can predict equipment failures and schedule maintenance, reducing downtime and increasing efficiency.
3. Quality control: AI powered sensors and cameras can monitor the quality of molasses and grain feedstocks and ethanol in real time, ensuing consistent product quality.
4. Supply Chain Management: AI can optimize the supply chain, from raw material procurement to product distribution, enhancing overall operational efficiency.
5. Energy Management: AI systems can monitor and manage energy usage, optimizing energy consumption and reducing costs.
6. Environmental monitoring: AI tools can monitor and manage environmental impact,

aiding in compliance with regulations and sustainable practices.

7. Data Analysis and Reporting: AI systems can analyze large volumes of data to provide insights for better decision making and compliance reporting.

These applications highlight how AI is revolutionizing the molasses and grain based ethanol industry by increasing efficiency, reducing costs, and enhancing product quality (Fig 1).

Fig -1 Major AI techniques adopted in Process control



Designing on Artificial Intelligence (AI) systems for Data Analysis in distillery industry:

1. **Define Objectives:** Clearly define what you want the Artificial intelligence (AI) to achieve. This could include improving plant efficiency, maximizing ethanol yield, reducing energy consumption or enhancing product quality.
2. **Data collection and integration:**
   - Gather data from various sources within the plant, such as fermentation parameters, distillation parameters, energy usage and quality control metrics.
   - Ensure integration of data from different systems (e.g. Sensors, control systems, ERPO systems)
3. **Data Preparation:**
   - Cleanse and preprocess the data remove inconsistencies or outlines.
   - Normalize the data to ensure uniformity in measurement units and scales.
4. **Choose AI models**
   - Select appropriate machine learning algorithms based on the objective common choices include regression models for prediction, for process optimization and neural networks for complex pattern recognition.
   - Consider advanced techniques like deep learning for more complex analysis if the data volume and complexity justify it.
5. **Training the AI models:**
   - Use historical plant data to train the model.
   - Ensure a diverse dataset that covers different operational conditions and scenarios.

6. **Model validation and testing**
   - Validate the model using a separate dataset to test its accuracy and reliability.
   - Perform continuous testing to ensure the model remains accurate overtime.

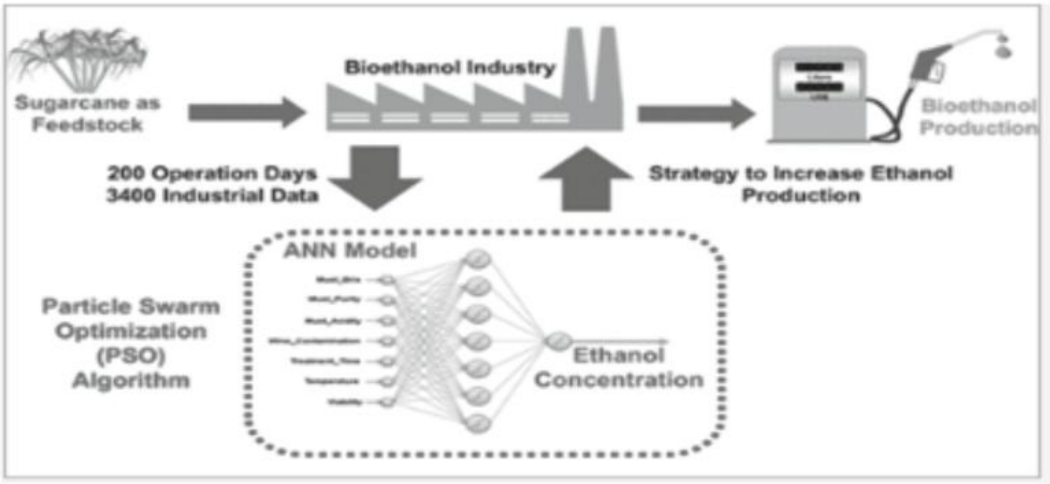
7. **Deployment:**
   - Integrate the AI model with the plant's control systems for real time analysis and decision making.
   - Ensure that the AI systems can integrate with existing hardware and software Infrastructure.

8. **Monitoring and Maintenance**
   - Continuously monitor the systems performance and make adjustments as necessary.
   - Update the AI model regularly with new data and insights.

9. **Feedback loop:**
   - Establish a feedback mechanism to learn from the AI's performance and make iterative improvements.
   - Involve plant operators and engineers in the process for practical insights.

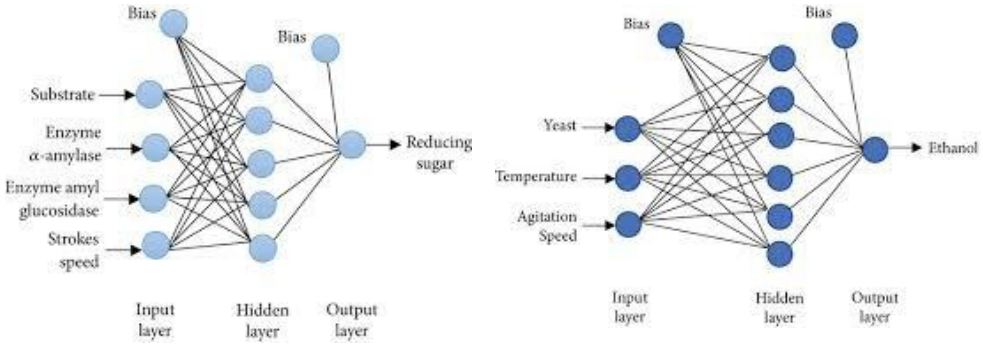
10. **Compliance and Security:**
   - Ensure that the AI systems complies with industry regulations and standards.
   - Implement robust data security measures to protect sensitive information.

By following the above said steps we can design an AI system that enhances plant performance in a ethanol plant leading to increase efficiency, reduced costs and improved product quality (Fig 2).



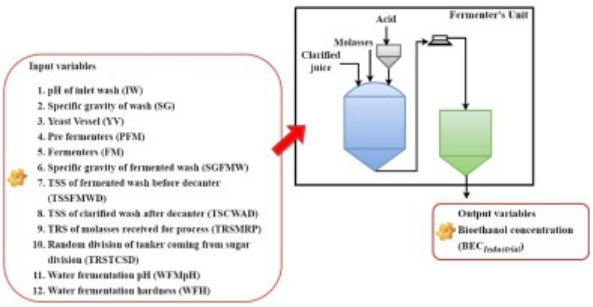
How Artificial Intelligence plays a significant role in distillery processes:

Artificial intelligence in the ethanol industry especially in advanced plants using a latest technology plays a significant role in optimizing the fermentation processes through data mining (Fig 3).



1. **Fermentation Process optimization:**
   a) Monitoring Fermentation Parameters: AI algorithms can continuously monitor parameters like temperature, pH, sugar concentration and yeast activity.
   b) Predictive Analysis: By Analyzing historical and real time data. AI can predict the outcome of the fermentation process, such as the expected ethanol yield and quality.
   c) Process control: AI can adjust fermentation conditions in real time to optimize the process like controlling temperature or adding nutrients.

2. **Distillation Process Efficiency:**
   a) Energy consumption optimization: AI can optimize the energy usage in the distillation process, reducing operational costs.
   b) Quality control: Through real time monitoring of the distillation process, AI
   c) ensures the consistent quality of ethanol produced.



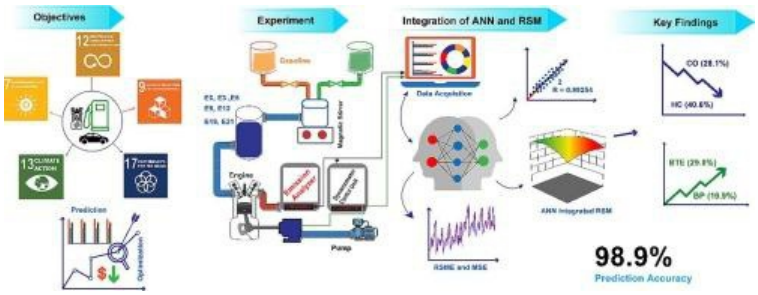
3. **Yield Maximization:**
   1. AI algorithms can predict and adjust the process parameters to maximize ethanol yield from the available feedstock.
4. **Predictive Maintenance**
   1. Equipment Health Monitoring: AI systems can predict when equipment might fail or require maintenance, reducing downtime and improving overall efficiency
   2. Anomaly detection: AI can detect anomalies in the fermentation and distillation processes signaling potential issues before they became critical.

5. **Integration with IoT and advanced Sensors:**

1. Real time data collection: IoT devices and advanced sensors collect vast amounts of data from the entire process.
2. Data Analysis and insights: AI analyze this data to provide achievable insights for process improvements.

6. **Supply Chain Optimization:**
   1. Raw material usage: AI can optimize the use of molasses or grains and other raw materials considering variables like cost availability and quality.
   2. Logistics: AI also plays a role in optimizing the logistics of the supply chain from raw material procurement to product distribution.
7. **Compliance and Reporting:**
   1. Regulatory compliance: AI systems can ensure that the plant operates within environmental and safety regulations.
   2. Automated Reporting: AI can automate the generation of reports for compliance and performance monitoring.

8. **Implementation of Latest Technologies:**
   1. Advanced Analytics: Techniques like machine learning and deep learning offer more sophisticated analysis of complex dataset (Fig 4).



   2. Clouds computing and Edge Computing: These technologies allow for scalable data processing and real time analytics.

Conclusion:

In this article, Artificial Intelligence, an effective modern technology requires to be implemented in the distillery or ethanol industry to minimize the waste generation, downtime and environmental complication and maximization of ethanol product yield to the required level. Various ways have been analyzed and guidelines have been issued to design artificial intelligence promoted models in distillery plant designing to supply chain management.

राजारामबापू कॉलेज ऑफ शुगर टेक्नॉलॉजी,इस्लामपूर

Wastes to worth

"Preservation of banana browning by using waste onion peel extract."

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Introduction:

Onion peels are used as dietary fibre supplements (gelling and thickening agents) in refined foods. These compounds increase the bulk of the food and help prevent constipation by reducing gastrointestinal transit time It also binds to toxins in the food which helps to protect the gut mucus membrane and thus reduces colon cancer risk. Furthermore, dietary fibres bind to bile salts and decrease their re-absorption, thus helping to lower serum low-density cholesterol levels. Dietary fibres and phytochemicals are gaining increased attention because of their antioxidant, anti-carcinogenic, and other health-benefiting properties. The onion industry produces waste that amount to approximately 15% of the total production. Since onion (*Allium cepa* L.) wastes (residues, surplus, and cull onion) are not suitable for fodder or landfill disposal due to the rapid growth of phytopathogens, e.g. *Sclerotium cepivorum* (white rot). Processing and stabilizing onion wastes could solve the problem of its disposal and getting stabilized onion by-products as natural anti-oxidant food ingredients showed that brown skin and top-bottom could be potentially used as a functional ingredient rich in dietary fibre, mainly in the insoluble fraction, and in total phenolics and flavonoids, with high antioxidant activity. Moreover, brown skin contained a high concentration of quercetin aglycone and calcium, and the top-bottom had a high concentration of minerals. Outer scales could be used as a source of flavonols, with good antioxidant activity and content of dietary fibre. Onion wastes adequately processed and stabilized could be useful in the food industry as functional ingredients to be added to processed foods. Onion extracts could be used as natural food ingredients for the prevention of browning caused by the enzyme polyphenol oxidase.

While a banana at the beginning of the ripening process might become sweeter and turn yellow, it will eventually over-ripen by producing too much of its own ethylene. High

amounts of ethylene cause the yellow pigments in bananas to decay into those characteristic brown spots in a process called enzymatic browning.

We tried waste onion peel extract at home for the prevention of the browning of bananas. This project is undertaken to prevent the spoilage of bananas by natural and home waste onion extract.

Objectives:

- Collection of waste onion peels and extraction of onion extract.
- Collection of fresh bananas from the market.
- Applying fresh waste onion peel extract on bananas
- Applying processed waste onion peel extract on bananas.

Materials and Methods:

Collection and preparation of onion peel extract:

100 gm of waste onion peels were taken in a 250 ml capacity beaker and a 10 ml amount of water was added to these onion peels. The content of the beaker was crushed into juice. This mixture was kept in a fine cloth to squeeze onion extract. 50 ml of this extract was collected in a clean glass beaker.

Application of extract:

Three fresh and yellow ripen bananas were taken in two separate containers. One banana was kept in the container as a control while another banana was applied with a small amount of extract and kept in another container. Both bananas were examined for color change 24 hrs time intervals.

Application of processed onion peel extract:

The extracted onion feel peel extract was heated at 100^0C for 10 minutes. The processed extract was applied to the banana that was kept in a third container.

Brown Banana [Spoiled Banana]

Onion Peel Extract

Results and discussions:

The banana kept in the first container started to brown after 3 days. The container second containing the banana started to brown after 5 days. The processed extract applied

banana remained as it is after 7 days. The processed extract was most effective for inhibiting the browning of the banana.

Conclusions:

All three experimental bananas started browning. The fresh extract delayed the banana browning effect. The most effective anti-browning effect was achieved by processed onion peel extract. We conclude that processed onion extract was showing a markedly anti-browning effect on a banana.

References

1. Aldean, A.A. Al-Jumaily, E.F. and Al-Safar, M.A. (2010). The Effect of Banana Skin on the Bacterial Infections of the Chronic Gingivitis Patients. African Journal of Paediatric Surgery 7(1). 145-149.

2. APHA (2002). Compendium of Methods for the Microbiological Examination of Foods. 4th Ed., APHA Technical Committee on Microbiological Methods for Foods. Washington DC, USA.

3. Atzingen, D.A. Gragnani, A. Veiga, D.F. Abla, L.E. Mendonça, A.R. Paula, C.A. Juliano, Y. Correa, J.C. Faria, M.R. and Ferreira, L.M. (2011). Gel from unripe Musa sapientum peel to repair surgical wounds in rats. Acta Cirurgica Brasileira 26(5). 379–382.

4. Beuchat, L.R. and Golden, D.A. (1989). Antimicrobials occurring naturally in foods. Food Technology. 43(1). 134 -142.

5. Buchanan, L.R. and Halbrook, B. (1995). Data needed to develop Microbial Food Safety Systems for Slaughter, Processing, and Distribution. An economic Research Service report. Tracking Foodborne Pathogens from Farm to Table. United States Department of Agriculture Conference Proceedings January 9-10, 1995. Washington, DC, USA . 71-80.

"A different approach for preparing solid nitrogen fertiliser from the urine of public urinals."

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Abstract:

Human urine is rich in valuable plant nutrients and when separately collected, it can be substituted for fertilisers. Organically grown agriculture products are gaining popularity worldwide, satisfying consumers with safer and trusted foods. However, organic agriculture practices provide farmers an alternative, environmentally friendly, sustainable agriculture. Besides, organic crops contain fewer nitrates, nitrites, pesticides, and trace elements than conventional crops. Even though organic systems generally have 20% lower yield than conventionally produced crops. Therefore, ongoing research looks forward to different organic sources that are plentiful and available at a little-to-no cost. "Human urine" is one of them, and has been gaining popularity as a raw material for organic cultivation. In this study, the pH of the collected urine sample was set at 8.5. This pH was most effective for decreasing the odor of the urine sample without losing nutrients. This deodorised urine sample was passed through the dryer and held for 10 min. Then water in the urine was evaporated. The condensed water was used to clean toilets or wash hands.

Introduction:

Despite significantly higher fertilizer prices across the globe throughout 2021, global nitrogen fertilizer demand appears to be set to increase in 2022.[1] Nitrogen supplies continue to be tight with various supply issues, but the price of nutrients could begin to fall in the second half of the year as supply returns. Global nitrogen fertiliser consumption amounted to some 108 million metric tons in 2019.[2] China was the largest consumer of nitrogen fertiliser that year, with more than 24 million metric tons. It was followed by India and the United States, with 19.1 and 11.7 million metric tons, respectively.[3]

The food we eat today is not farmed sustainably. Most fertilisers are either made by transforming nitrogen in the air into ammonia. [11] This single nitrogen fertilizer takes 2% of the world's energy and depends heavily on fossil fuels, or by mining finite resources, like phosphate rock.[4]

A solution to this problem could be much closer than people realise. [12] Most of the nutrients we consume in food are passed into our urine because our bodies already have enough. [5] But instead of being recaptured, these nutrients are flushed, diluted, and sent to wastewater treatment plants where they're scrubbed out, leaving effluents that can be safely released into the environment.[6]

The most nutrient-rich part of wastewater is human urine, which is less than 1% of the total volume but contains 80% nitrogen and 50% phosphorus. [7] This project aims to recycle this urine into valuable and sustainable farmland fertilizer. [8] The urine is mostly water, farmers would have to spread 15,000kg of it just to fertilise a hectare of land.[9] If there was a way to remove the water and extract just the nutrients, farmers would only need to apply 400kg of it for the same effect. So we undertake this project. [10]

Objectives:

- Collection of urine samples from public urinals.
- Deodorize urine by changing the pH.
- Drying of deodorised urine.

Material and Methods:

Collection of urine samples:

The public urine sample was collected in a one-litre capacity plastic bottle. This urine bottle was brought into the laboratory.

Deodorisation of urine:

The ammonical odor of the collected public urine is minimised by changing the pH to alkaline. A 0.1% calcium or magnesium hydroxide solution was added to the urine sample. These alkalising agents made the urine alkaline.

Drying of deodorised urine:

This alkaline urine sample was dried in the laboratory using a simple drying procedure. Any water in the urine evaporates, leaving only nutrients. The evaporated water is condensed and can be reused to flush toilets or wash hands.

Results and discussion:

The pH of the collected urine sample was set at 8.5. This pH was most effective for decreasing the odor of the urine sample without losing nutrients. This deodorised urine sample was passed through the dryer and held for 10 min. Then water in the urine was evaporated. The condensed water was used to clean toilets or wash hands.

Conclusions:

Bioculture for better agriculture

"Development of phosphate solubilizing bacterial bio culture for minimizing consequences of chemical fertilizers."

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Introduction:

Bio cultures can be used as supplements to chemical fertilizers; they are comparatively inexpensive and renewable sources of plant nutrients. Bioculture is selecting strains of microorganisms that are beneficial to the growth of plants. These microorganism s are cultured in the laboratory, mixed with suitable carrier materials, and then applied to the fields. They maintain soil health and minimize pollution of the environment by lowering the use of chemicals (Tripti *et al.,* 2012). Bio cultures are used to treat seeds, plantlets, and grown plants. The popularity of bio-culture cultures is due to their eco-friendly, non-hazardous, and non-toxic nature. The living microorganism colonizes the rhizosphere or colonizes the interior of the plant, they promote growth by increasing the availability of nutrients and help in the breakdown of inorganic substances in an organic form, increasing the supply of growth stimulus to the seeds of crops, plant surfaces and even in the soil can help in greater productivity.

The role of microorganisms in converting insoluble forms of nutrients into soluble forms is well known. After nitrogen, phosphorus is second in terms of importance for growth in plants. Phosphorous is 0.2% of the dry weight in plants. Phosphorus is obtained by the plant as phosphate anions. Phosphate-solubilizing bacteria possess the capability to convert phosphorus from insoluble to soluble form (Keneni *et al*., 2010). Phosphatic fertilizer when applied to the soil it has seen that only a small amount is utilized by the plants. In India, it has been estimated that about 98% of the soil has some amount of deficit in phosphorus. Chemical fertilizers having phosphorus have a disadvantage, inorganic phosphates when applied to the soil are immobilized and thus not available to the plant (Karpagam and Nagalakshmi, 2014). PSBs or Phosphate solubilizing bacteria help in converting phosphorus into soluble forms by acidification by organic acids, and chelating oxo acids from sugars. They also produce enzymes like phosphatase enzymes that help in further degradation. Inoculation of PSBs in soil or near the rhizosphere of

This method is natural and effective for the production of nitrogen-containing fertiliser. We can conclude that urine from public urinals is used to make solid nitrogen fertiliser. This method of solid nitrogen fertiliser is cost-effective. We can store this natural solid nitrogen fertiliser for a long time, which is a significant storage limitation of liquid urine storage.

References:

1. M Bhuiyan , D. Mavinic et al.Thermal decomposition of struvite and its phase transition. Chemosphere 70, (2008) 1347-1356.
2. H. Bhuptawat, S. Chaudhari Innovative physico-chemical treatment of wastewater incrporating Moringa oleifera seed coagulant. Journal of Hazardous Materials 142, (2007): 477-482.
3. A. Gunay, D. Karadag et al. Use of magnesite as a magnesium source for ammonium removal from leachate. Journal of Hazardous Materials 156,(2008) 619–623.
4. Zs. Ban, G. Dave Laboratory studies on recovery of N and P from human urine through struvite crystallization and zeolite d P from human urine through struvite crystallization and zeolite adsorption. e adsorption. Environmental Technology 25, (2004). 111 -121.
5. A. Slivka,., G. Dave et al. Nutrient recovery from human urine using pre-treated zeolite and struvite precipitation in combination ecipitation in combination with freezing-thawing and plant availability tested on common wheat. CLEAN, 36(1), (2008) 45-52.
6. El Rafie, Sh., El Ibiari,et al. Recovery of ammonia nitrogen from industrial wastewater treatment as struvite slow releasing fertilizer. Desalination 214, (2007) 200–214.
7. B. Etter, E. Tilley et al. Low-cost struvite production using source-separated urine, Water Research 45 (2011) 852-86.
8. H. N. Bischel ,A. Schertenleib, et al. Inactivation kinetics and mechanisms of viral and bacterial pathogen surrogates during urine nitrification. Environmental Science: Water Research & Technology 1, (2015) 65– 76.
9. K. M Udert., M. Wächter Complete nutrient recovery from source-separated urine by nitrification and distillation. Water Re- search 46 (2), (2012) 453–464.
10. Jackson, M L.(1979).soil chemical Analysis .prentice hall of india pvt.ltd.
11. P. simha et al. Hygiene aspect of treating human urine by alkaline dehydration, Water Research, 144(2018)474-481
12. S. dutta et al. Fertilizer from dried human urine added to ash and lime a potential product from eco-sanitation system,Water Science & Technology , 74.6(2016)14361445.

the plants has been shown to promote the growth of plants as a stimulatory effect. Plant roots can take up different forms of phosphorus like $H2PO^4$, and HPO^{2-}, this take-up normally depends upon the soil pH, temperature, moisture content, and other nutrients or minerals present in the soil (Rajsekaran *et al*,2012).

This research is aimed at the development of efficient phosphate-solubilizing bacteria from local soil samples. We tried phosphate-solubilizing bio culture for plant growth in pots.

Objectives:

- Collection of soil samples from different regions.
- Enrichment of soil samples
- Isolation of phosphate-solubilizing bacteria
- Development of bioculture
- Application of bio culture for plant growth in pots

Materials and Methods

Collection of soil samples: Five soil samples were collected from various soil samples and soil samples were brought to the laboratory by sterile polythene bags.

Enrichment of soil sample: Five soil samples were inoculated in a selective and sterile Pikovskaya's broth medium containing l^{-1}: glucose, 10 g; $Ca_3(PO_4)_2$, 5 g; $(NH_4)_2SO_4$, 0.5 g; NaCl, 0.2 g; $MgSO_4 \cdot 7H_2O$, 0.1 g; KCl, 0.2 g; yeast extract, 0.5 g; $MnSO_4 \cdot H_2O$, 0.002 g; and $FeSO_4 \cdot 7H_2O$, 0.002 g. All soil-added flasks were kept at room temperature for 72 hrs. The number of phosphate-solubilizing bacteria was increased in both called enrichment.

Isolation of Phosphate solubilizing bacteria: Each enriched soil sample was separately streaked on a KB medium. All streaked plates were incubated at room temperature for 72 hrs. The incubated plates were examined for the development of a clear zone around the colony.

Development of bio culture: The maximum clear zone showing colonies was selected for the development of phosphate-solubilizing bio culture. All potential phosphate-solubilizing bacteria were brought together. Such mixed bio culture was applied to plants for growth.

Pot experiments: Such bio culture was mixed with silica powder as a carrier. Carrier-applied bio cultures were mixed directly into the soil of the pot plant. The height of the plants grown in pots was measured and the effect of developed bio culture was studied.

Results and discussion: A total of 10 phosphate-solubilizing bacteria were isolated from five soil samples. Out of 10 phosphate-solubilizing bacteria, 3 phosphate-solubilizing bacteria were showing a maximum zone of inhibition on a KB agar medium. The results of phosphate

solubilizing isolates were represented in table no.1. The highest clear zone was observed for isolate SG3 and the lowest clear zone was observed for isolate SG7. The clear zone in mm for the rest of the other isolates was in between the clear zone of isolate SG3 and SG7. The isolates SG1, SG2, and SG3 were selected for further study. These three isolates were separately grown in a broth medium and then mixed with a carrier. Such a mixture was applied to plants grown in pots. This mixture increased plant growth when compared with the control.

Table no.1 Zone diameter of isolates on medium

Sr. No.	Isolates	Zone diameter in mm
1	SG1	07
2	SG2	08
3	SG3	09
4	SG4	04
5	SG5	03
6	SG6	02
7	SG7	01
8	SG8	02
9	SG9	03
10	SG10	02

Conclusions:

The bio cultures are environmentally friendly and alternative to chemical fertilizers. The drastic shift in pH of the medium on the acidic side shows the production of organic acid and enzymes by the microorganisms. This can be helpful for the solubilization of the phosphate provided in the medium.

Field trial output of the PSB bio culture shows marked differences in soil fertility and increased plant height of pot-grown plants.

References:

- Karpagam, T. and Nagalakshmi, P.K., (2014). Isolation and characterization of phosphate solubilizing microbes from agricultural soil. Int *J Curr Microbiol Appl Sci*, 3:601-14.
- Keneni, A., Assefa, F., and Prabu, P.C., (2010). Isolation of Phosphate solubilizing bacteria from the rhizosphere of Faba Bean of Ethiopia and their abilities on solubilizing insoluble phosphates. *J. Agri. Sci. Tech*12:79-89.
- Tripti, Kumar, V., and Anshumali., (2012). Phosphate Solubilizing Activity of Some Bac terial Strains Isolated from Chemical Pesticide Exposed Agricultural Soil. *Int J Eng Res Devl* 3(9): 01-06.
- Rajasekaran S., Ganesh Shankar, K., Jayakumar, K., Rajesh, M., Bhaaskaran, C., Sundar amoorthy, P. (2012). Biofertilizers current status of Indian agriculture. *Int. J. Environ. Bioenergy*,4(3): 176-195.

CBG GENERATION FROM SUGAR INDUSTRY FEEDSTOCKS USING ADVANCED CSTR SEMI DRY FERMENTATION PROCESS

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ABSTRACT

Shrijee-J&F biogasoffers CSTR (Continuous stirred tank reactor) based semi dry fermentation process for conversion of feedstock's with high dry matter to biogas. The technology has been in use since last 15 years and close to 100 biogas plants is operation using the technology mainly in Europe.Organic solid feedstock's such as paddy straw, cane trash m, press mud, poultry litter, bagasse ,napier grass have a dry matter between 20 % to 85%. CSTR semi dry fermentation process can be use used for feedstock with up to 35% dry matter without addition of water.

CSTR semi dry fermentation process requires 50% size of digesters in comparison of other technologies,system also requires lower operating costs and there is very minimal or no liquid slurry generated in the biogas plants. Thisarticle discusses about the potential forconversion of sugarcane industry basedfeedstock's such as press mud ,Cane trash/leaves, bagasse to biogas using CSTR based semi dry fermentation process. It is estimated that close to 441,000 tonnes/year of CBG can be alone generated in India using press mud as a feedstock for biogas generation.

1.CSTR SEMI-DRY FERMENTATION PROCESS

There are various types of anaerobic digestion technologies which are used for digestion of various organic feedstocks. Choosing the right technology for a specific substrate isvery important for the successful operation of a biogas plants. J & F Biogas has developed CSTR based semi dry fermentation process which is specifically suited for organic waste with high Dry matter. The process can handle organic waste up to 30-35% DM without additional water for dilution. Special mixing system was developed for handling high viscosity inside the digester and for handling feedstock with high dry matter..

In the context of sugarcane industry, press mud has30%DM(Dry matter) andbagasse has 50% DM respectively which can be digested using CSTR Semi dry fermentation process.

Organic substrate and their Dry Matter (DM)

	Feedstock	DM%
1	Cow dung	15%
2	Press mud (sugar industry)	30%
3	Baggase(sugar industry)	50%
4	Poultry litter	20-30%
5	Paddy straw	85%
6	Food waste	15-20%
7	Napier Grass	20%
8	Maize Silage	30%
9	Cane trash (sugar industry)	85%

Table 1:

2.PRESS MUD

Filter cake, commonly known as press mud, is the suspended impurities separated during the process of cane juice clarification by the sulphitation process. Press mud traditionally is used as manure through the biocompost process by spraying spent wash on press mud. Sugar mills that are not attached to distilleries, sell the press mud to the sugarcane growers at concessional rates. For every 100 tons of sugarcane crushed, about 3.5 to 4 tons of press mud cake are generated as a by-product. It is a soft, spongy, amorphous and dark brown material, containing sugar, fiber and coagulated colloids, including cane wax, albuminoids, inorganic salts and soil particles. It consists of 70-73% water and 0.9 -1.5% sugars, organic matter, nitrogen, phosphorus, potassium, calcium, sulphur, coagulated colloids and other materials in varying amounts.

In the context of the sugar industry, press mud is one of the byproducts where the potential is not completely realized. Press mud is rich in organic matter, and the macro and micro nutrients are a good substrate for production of biogas through an aerobic fermentation.

3.CSTR SEMI DRY FERMENTATION TECHNOLOGY FOR CONVERTING PRESS MUD TO BIOGAS

Press mud has close to 70-75% moisture, 25-30 % dry matter and 75-80 % organic dry matter. With SEMI DRY Fermentation process press mud with 30% DM can be digested without adding any water. Press mud with 30 % DM when fed in to the digesters decomposes to close to 20% DM inside the digester. The 20% DM inside the digester is mixed with high viscosity mixing system for a reaching a uniform mass. Proprietary mixers are used for mixing of high viscosity substrates in the digesters.

The digestate generated post digestion has close to 20 %DM (Dry matter) and 80% moisture. The digestate generated is in form a thick sludge which can be further dried and can sold as high value organic manure. There is no liquid slurry generated using CSTR based semi Dry fermentation process. The liquid slurry handling process is very minimal.

Picture 1: Substrate (thick sludge) with 16 % Dry matte post digestion

Picture 2: CSTR Semi dry fermentation process based plant operating in Germany

Picture 3: Feedstock storage yard model for storing press mud for 6 months during off season

4.COMPARISON OF CSTR SEMI DRY FERMENTATION AND OTHER TECHNOLOGIES

The table below compares some of the key parameters for a 100 tons/day capacity press mud to biogas plant using CSTR semi dry fermentation process and other technologies such as wet fermentation based process

Parameters	CSTR SemiDry fermentation	Other technologies
Size of digester (m3)	3500 m3	7000 to 10,000 m3
Amount of water/slurry required for pressmud with 30% solids and 70% moisture	0	1:1 ratio
Dry matter % (digestion capacity)	Up to 35%	10-12%
Co-digestion with Multi feedstocks	Greater flexibility with co-digestion with other feedstocks such as baggase,poultry litter etc	Difficult to co-digest feedstocks with higher dry matter . More water will be required for dilution
Requirement of decanter /solid liquid separator	Not required . Digestate will have 18% Dry matter	Required for solid and liquid generated (additional investment)
Liquid effluent/slurry generated post digestion	Digestate will have 18 % dry matter no liquid generated	40 m3/day liquid slurry generated post recirculation as well
Operation and maintenanc	Low	Medium
Liquid digestate storage infrastructure (tanks/lagoons)	Not required	Required to store liquid slurry

Table 2: Technology comparison

5.BIOCNG POTENTIAL FROM PRESS MUD IN INDIA

The table here summarizes the total CBG generation potential from Press mud in India.

Sl.no.	Input parameter	Metric	Value
1	Amount of cane crushed/year	Million tonnes	300
2	Filter cake % on cane crushed	%	3.50%
3	Annual Filter cake generated	Million tonnes	10.5
4	Potential to produce CBG	Tonnes	4,41,000

Table3: CBG potential

Domestic production of CBG from press mud generated at sugar mills will save close to USD 270 Million worth of Forex savings per year on natural gas imports.

6.BIOGAS FROM BAGGASE

Baggase is another substrate which can be potentially used for biogas generation. Biogas yield tests were conducted based on batch type fermentation process. Bagasse has dry matter of 50 %, and Volatile solids are 90 % of dry matter. The biogas yield of baggase using batch type process was 207 m3 of biogas per ton of fresh matter. Per ton VS(volatile solids) was about 460 m3 of Biogas. In a continuousfermentation process the gas yield will increase by 10 to 15 %.The estimated yield in a commercial plant will be about 227 m3 per tonne of bagasse. The biogas yield from bagasse is two times the yield of press mud however the cost of baggase and its alternate applications needs to factored for arriving at suitable application of baggase.

CSTR Semi Dry fermentation will be very much suitable for bagasse digestion. Bagasse has dry matter of about 50%. It is observed that viscosity in the digesters increases significantly during digestion of bagasse, a very strong and high viscosity mixing system is required for bagasse digestion.

7.BIOGAS PURIFICATION AND BOTTLING

Biogas generated through the fermentation process can be subsequently upgraded to bio-CNG/CBG (compressed biogas) .Upgraded biogas (CH4>95%) of natural gas quality can be used as a replacement for CNG(Compressed natural gas) and liquefied petroleum gas (LPG) in various domestic and industrial applications. Press mud ,cane trash and baggase based biogas plants would thus eventually generate additional revenues for sugar mills. Government of India is actively encouraging sugar mills to use press mud for bio-methane generation to meet the rising petroleum fuels and natural gas demand in India.

Picture 4: Biogas purification system for CO2 removal

10.CONCLUSION

Sugarcane as a crop is very unique which is used for producing various primary and secondary products.Sugar has been the main product with commercial value for quite a long time. Over a period of time several by products have evolved such as alcohol, power generation from baggase , ethanol , CO2 production , organic manure via composting among other products. Press mud along with baggase have a huge potential for CBG generation from the sugar industry. CBG produced from press mud along with biomanure generated has an enormous potential to add additional revenues stream to sugar industry as whole. CSTR Semi Dry fermentation process will be one of the best suited technology for handling press mud, cane trash and baggase with lower operating costs, minimal water requirement and higheroverall efficiency in the digestion process. In addition to sugarcane industry feedstocks, other organic feedstocks such as paddy straw, poultry litter and Napier grass are suitable for CSTR based semi dry fermentation process.

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