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Identifying Different "Categories" of "Bacteria" from a "Barak Valley" "Tea Garden", Assam (India)

M.K. Bhattacharjee[1]*, P.B. Mazumder[2], and Prof. G.D. Sharma[3]

[1]*currently working in a school S.N.V.M, Silchar

(formerly was a research scholar of Department of Biotechnology, Assam university, Silchar)

[2] Department of Biotechnology, Assam University, Silchar, Assam

[3]Bilaspur University

*Corresponding Author E-mail: mantu.bhatt.50@gmail.com

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ABSTRACT

Two "dissimilar""bacteria" were "isolated" from a "Barak Valley Tea garden", both were "poles apart" in their natures. One, "isolated variety" was "plucked" from the "surrounding" where there is "soil root interaction section", it was "growned" in a "nitrogen". "deprived""medium". The "isolated variety" was then taken upon for its "N-gluing competency" through a well definite "system" of "Acetylene Reduction Assay".

Another "isolate" was "plucked" in same way, from the same "site" and in similar manner and then the "detached bacteria" was arranged to "inculcate" on another "medium" at which it was preordained to be "infused". "In the end" the "physico-chemical behavior" for that "another" "isolate" was made "reachable". Alongside, the "both of them" were accomplished for "widespread" of "antibiotics".

***Key words**: "inculcate", "infused", "plucked", "widespread".*

INTRODUCTION

The usefulness of "Plant Growth Promoting Rhizomicroorganisms" (PGPRs) has been a matter of interest from long duration. As being mentioned by Mishra *et al.*,[1] they are conspicuous for "Nitrogen fixing from atmosphere", they are known to "solubilizing phosphates of inorganic types", also useful for generating "plant hormones", "siderophore", "bacteriocins"., etc. hence helps plants to fight against harmful and "microbes of pathogenic nature" [2].Tea plant was "opt for" ,as for its impact, in this "region". We all are aware on the importance of "Nitrogen fixation" on world, that has been expounded by Alexander[3] for carrying on the "progression" of "N_2 fixation", it is "obligatory" to alter "ammonia" into "organic nitrogen" compounds" more speedily or to be "get rid" from the "intracellular" "place" of "N_2 metabolism" in "microbial cells" [4].

MATERIALS AND METHOD

Parting of two "Bacterial Isolates":

The first "bacterial form" was picked out from section where there is the interaction between "plant root-soil" region, in its "relatable King's B agar medium"[5], another one was on "N liberate" "Ashby sucrose medium" [6] from "same" "tea garden" in this part of state Assam.

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"Physico-Chemical" "Estimation": "The physico-chemical" plans such as "tolerance in pHs" and "responses towards "temperatures" by "PS1" "bacterial isolate" was settled on by following the normal means by Balamurugan *et al.,*[7]. The "Salt tolerance" for the "PS1, bacterial isolate" obtained on "King's B agar medium[5]" was verified by the routes told by Jadhav *et al.,*[8] by doing a little sort of alteration in working procedures.

"Antibiotics" Test for first two "isolates": The "bacteria "PS1" and "Azo2" were resolved for sensitization towards the "antibiotics" by performing with these: "Ampicillin (5µg/ml)", "Gentamycin (30 µg/ml)", "Tetracycline (30 µg/ml)", "Kenamycin (8µg/ml)" and "chloromphenical (30µg/ml)" with the said concentrations, the "sensitivity of antibiotics" were established[9].

The "N-acquirement" for "Azo-2 isolate" was accomplished with little modified sets of Hardy *et al.,*[10] and Hardy *et al.,*[11]. Alternatively, [12] practices may also be pursued for "ARA" ("Acetylene Reduction Assay").

The author offers thanks to "IBSD" (IBSD: Institute of Bioresource and Sustainable Development) director, O.N.Tiwari and his teammates for their helping out to carry on "ARA" assessment for "N-gluing" for the "isolated bacteria". Different media were tried for "isolating" that "N-gluing" "species", in the beginning but later on "Ashby's sucrose"[6] was settled for the "*Azotobacters"*. The "chromatography apparatus" used there at "IBSD" (Thermo scientific CHEMITO CERES 800 plus) gas chromatography at IBSD.

RESULTS AND DISCUSSION

Table I: "Physico-Chemical" Test of "PS1" "Isolate"

S.No.	Isolates	Growth at different pHs			Growth at different temperatures				Salt tolerance (NaCl of 1%)
		4	6	8	4^0c	16^0c	20^0c	30^0c	1%
1	PS1	+	++	++	_	++	++	++	+

From above table it indicates that + means moderate, ++ good and +++ V.good.
The isolate was marked as PS1 as being shown to be *Pseudomonas* spp.

Table II: "Detection of Antibiotic compassions of PS1 and Azo2"

S.No.	Strains	$Ampicillin_5$ (ZOI in cms)	$Gentamycin_{30}$ (ZOI in cms)	Tetracycline $_{30}$(ZOI in cms)	$Kenamycin_8$ (ZOI in cms)	$Chloromphenicol_{30}$ (ZOI in cms)
1.	PS1	_	0.4	1.5	_	1.7
2.	Azo2	_	0.4	1.2	_	1.9

"ZOI": "Zone of inhibition" in centimeters.

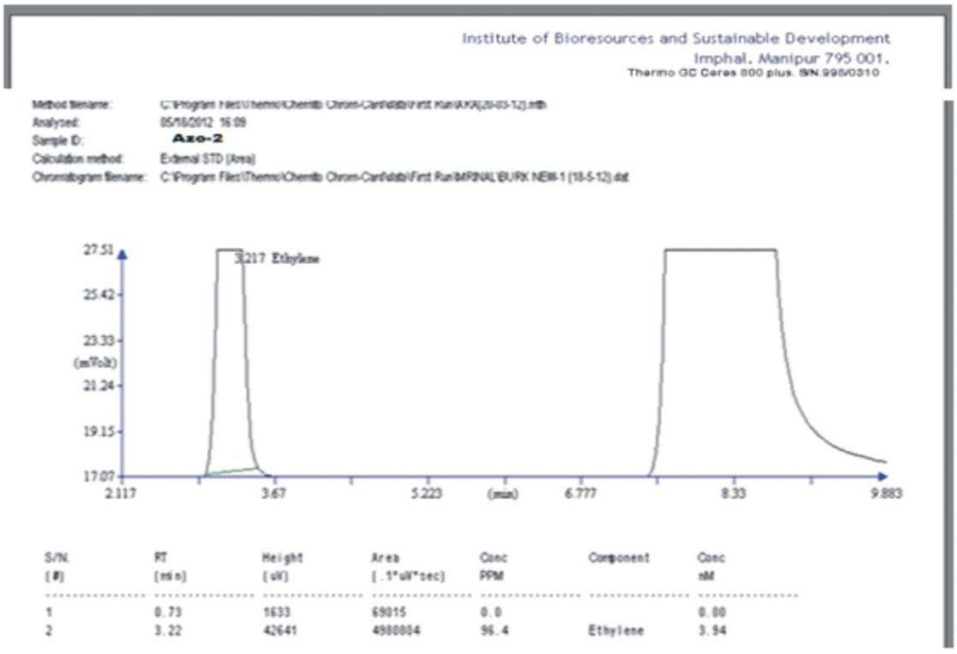

Fig. I Sketch for "ARA" activity by the "bacterial variety"

DISCUSSION

The isolate got on the "King's B agar medium"[5] was recognized to their "genus" through that it appears, and on the groundwork of "physico-chemical traits" This was done by following the "*Bergey's Manual of Determinative Bacteriology*"[13]. The "isolate" employed 1% NaCl; growth, watched at 16^0C, 20^0C as well as nicely at 30^0C. The "isolate" grew at the three said pH. Then advancing for the "antibiotic test" it was stated from the result of "antibiotics testing" that both "PS1" and "Azo2" expressed positiveness towards "Tetracycline" and "Chloromphenical". The importance of "PGPR" are felt these days mainly for "improved growth in plants" and for "control of diseases" that been discussed by Barka *et al.,*[14] and Chakraborty *et al.,*[15]. The figure indicates how nicely does the "Azo-2" variety shows positive "ARA" ("Acetylene Reduction Assay"). One more thing that has to be discussed is that, it has been recognized to all that how finely does the "*Azotobacter*" species had the ability to acquire "Nitrogen" as strains of "non symbiotic" "bacteria" isolated during Nikul *et al.,*[16] ,the isolates were tested for "Nitrogen fixing abilities" and displayed a confirmation that that isolates "fix N" so on comparing the end results of the Azo2 with their end results ,after winding up its been come to know that the "Azo2" variety is also a "persuasive N-fixer". For better remembering the "N fixer" is blotched as "Azo2" also can be as "Az2".

CONCLUSION

The present trial was summarized at some tea gardens of "Barak valley", Assam (India) India. Some "isolates" were "isolated" their impacts were felt from long time ,but in this manuscript "N-gluing" nature of one "bacteria" and for other "bacteria" "physico-chemical" behaviors and "Antibiotic" responses were undertaken. Some more facts would have come out, if been "molecular tools" "implemented".

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The members in the department of "Biotechnology of Assam University" were thanked for their help in research. A deep appreciation is also uttered to a variety of sources for "massive information" about the "topic". There is surety that these categories of work might be attempted and successfully completed in other parts of country and "world", but here in this part, it is a "curious" move. So for this reason, all must be acknowledged. Also in connection to that the above said, isolated "bacteria" from genus *"Pseudomonas"* the "morphological" looks and "biochemical patterns" have been already elucidated on *Scholarly Journal of Biological science*s Vol2 (1), pp 5-7, Jan 2013,but the work done here wasn't . Still I "acknowledge" all in that connection.

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