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Genetic Change Can Be Induced in Same Generation

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Abstract:
Genetic change induced asexually and proved that some plants may genetically changed in same generation which modify the theory of Greger Johaan Mendel's theory of heredity

Keywords *Changes induced in Tomato, Brinjal, Cowpea, Bean, Mung plants*

1. Introduction

I have been doing research at my personal level since 2000. I am M.Sc(Ag.) in Mycology and Plant Pathology -1974 and superannuated from the Govt. service as Dy. Director in the Department of Agriculture, Govt. of Odisha, India on 31.3.2009. My key areas of interest are mostly in the fields of Genetic Changes/Transfer by asexual, non chemical method.Sir I am not a research worker nor worked under any research organization.

2. Abstract

While describing solanaceae Botany authors describe (Solanum esculentum,tomato plant the petals are restricted to 6 and sepals also 6.in elementary biology books. Under asexual ,no chemical used the same plant may bear 13 petals and 8 calyx.This has been also proved in cowpea plant that trifoliate character is changed to quadri/pentafoliate in same plant where trifoliate leaves are there.Sir while describing morphology can we not write that under specific situation like mutation it may vary. I am sending photographs and URL of videos where genetic change takes place in same generation in same plant due to mutation.The experiment was conducted by my personal effort during 2010 and presently it is stopped due to lack funds and scope.

No	Appearance (in Time New Roman or Times)		
	Plant	**Description (Normal)**	**After mutation**
1	Cowpea	Trifoliate	Penta/quadrifoliate
2	Tomato Flower	Six Petals	Increased to 13 petals
3	Tomato Flower	Calyx-6	Increased to-8
4	Brinjal		Green colour induced
5	Cowpea	-	Penta foliate-F1
6	Bean	Leaf normal	Shape changed
7	Tomato	Normal ovary	Double ovary

Table 1

Sl. No	Normal- in cms	Mutated In cms	Dif in cms
1	18	25	+7
2	18.5	23	+4.5
3	21	26	+5
4	16	25	+9
5	16	23.5	+7.5
6	13	25.5	+12.5
7	14	23	+9
8	17	22.5	+5.5
9	17.5	19	+1.5
10	10	18	+8
11	16	22	+6
12	16	24	+8

Table 2: Cowpea Length increase
Data taken on 10.04.2010

Sl. No	Normal- in cms	Mutated In cms	Dif in cms
1	5	6	+1
2	3	8	+5
3	8	8	0
4	8	17	+9
5	6	12	+6
6	6	12	+6
7	6	7	+1
8	6	5	-1
9	3	7	+4
10	3	5	+2
11	2	11	+9
12	8	11	+3
13	5	7	+2

Table 3: Cowpea Length increase
Data taken on 14.04.10

3. Section Headings

- Brinjal- Mutated plant bears fruits of different shapes and colors.
- Tomato- Mutated plant bears flowers with 13 petals against 6 petals, Calyx increased to 8 against 6
- Cowpea - Mutated plant bears Pentafoliate leaves against trifoliate character,racter.
- Bean - Mutated Bean plant Pentafoliate leaves against trifoliate character
- Mung- Leaf shape changed.

4. Figures

Orginal Cowpea Plant Where Mutation Induced Creeper
Mutated Cow Pea Plant Shows Pentafoliate


Cowpea Plant Dwarf At Fi Generation Early Maturity Bushy
Mutated Cowpea Plant S Hows Pods At Maturiry Stage


Mung Plant Leaf Shape Changed On 22.07.10
Mutated Bean Plant Leaf Shape Changed


Mutated Tomato Plant Shows Flowers With 13 Petals
Tomato Mutated Plant With Fused Ovary & Calyx


Single Ovary With-7 Calyx
8-Calyx In Mutated Tomato Plant


Mutated Purple Plant Green Color Induced
Mutated Purple Plant Green Colinduced Shape Changed


Mutated Purple Plant Green Color Induced
Mutated Purple Plant Green Color Induced Various Shapes


Normal Brinjal(Green)Plant In Poly Bag
Mutated Purple &Green Plant At Harvest

5. Links and Bookmarks

- Cow pea
- http://youtu.be/FFUr5OdDgwU
- Brinjal Puple
- http://youtu.be/oMpE66Ta23s
- Brinjal-More fruits
- https://www.youtube.com/watch?v=mtaMLwakxxk
- Cow pea F2 Penta foliate
- http://youtu.be/VvhB68OJInQ

6. References

No book,journal,electronic nor internet reference only basic B.Sc(Ag) level knowledge applied. Practical knowledge and experience on work.

7. Conclusion

While describing morphology we should write that under specific situation like mutation it may vary..The experiment was conducted by my personal effort lack funds during 2010 and presently it is stopped..This can create new scope in botany/Agriculture.Since Cowpea plant F1 produces penta/trifoliate character,the transfer /mutation is stable. Breeding may not be required in many crops. This can create new scope in botany/Agriculture.In 24 readings of cowpea pod length it increases in 22

cases and decreases only in one case and no increase in one case.F1 becomes dwarf(See Photograph) early fruiting was noticed. Since Cowpea plant F1 produces penta/trifoliate character, the transfer /mutation is stable. The scope of making Hybrid in a shorter period with lesser cost is possible.

- **Mutated Brinjal** plant both purple and green bear more fruits as shown in case of normal plants both planted in a poly bag having 1/6 of soil in comparison to that of the field condition. Crops of local importance can be developed.

Crop development by this asexual, Non chemical method is cheaper, requires less time to induce change as I have done in poly culture.

8. Acknowledgement

I acknowledge the inspiration given by Dr.Panjab Singh,the then director Indian Agricultural Research Institute, New Delhi who has appreciated my work vide his letter NoDIR/PS/2000/625/2 dated 7th June 2000