



**ACHIVEMENTS**  
**DEPARTMENT OF AGRICULTURAL STATISTICS**  
**AND COMPUTER CENTRE**  
**N. M. COLLEGE OF AGRICULTURE**  
**Navsari Agricultural University, Navsari (Gujarat)**



**A. Awards**

Sr. No.	Name of award	Year
1	Best Thesis Award	2021
2	Young Scientist Award	2021

**B. Seminar/training organized:**

- 1) Two Days National level Webinar on “*Diagnostics and Remedial Measures for common errors in application of statistics*” was organized during 20-21, Oct., 2020.
- 2) One-day National level Webinar on ““*Statistics for Food Security and Promoting Sustainable Agriculture*” was organized on June, 29, 2021 on the eve of 15<sup>th</sup> National Statistics Day.

**C. Post graduate/Ph.D. thesis**

Sr. No.	Year	No. of M.Sc. (Agri.)	No. of Ph.D.	Total
1	1983	01	00	01
2	1984	02	00	02
3	1986	02	00	02
4	1996	00	01	01
5	1997	00	01	01
6	1999	00	01	01
7	2004	01	00	01
8	2011	01	00	01
9	2013	01	00	01
10	2016	01	00	01
11	2017	02	01	03

<b>Sr. No.</b>	<b>Year</b>	<b>No. of M.Sc. (Agri.)</b>	<b>No. of Ph.D.</b>	<b>Total</b>
12	2018	02	00	02
13	2019	03	01	04
14	2020	03	00	03
15	2021	03	00	03
Total				24

#### **D. Research recommendations (2016-17 to 2020-21)**

<b>Sr.</b>	<b>Title and Recommendation</b>	<b>Approval Year</b>
<b>1.</b>	<p><b>Construction of selection indices using different economic coefficients to select optimum selection index in Indian bean (<i>Lablab purpureus</i> L. sweet)</b></p> <p>The genetic gain of selected Indian bean progenies was observed higher with equal weight method as compared to genotypic correlation coefficients and genotypic path coefficients (Direct effect) weight method. It is recommended to select progeny based on plant height, pod width and days to maturity that provides higher genetic gain in Indian bean seed yield improvement program. It is suggested that progeny F3B 144 2 can be used in breeding for getting higher yield.</p>	<b>2020-21</b>
<b>2.</b>	<p><b>Stability of sorghum genotype through AMMI model in Gujarat</b></p> <p>The scientist involve in this crops are advised to use SR-2957(G5) sorghum germplasm for grain yield and dry fodder in their breeding programme to explore other breeding parameters aggressively. For green fodder sorghum SRF-322 (G1) is highest yielder and has stable performance across locations hence advised for further utilization in different breeding programme.</p>	<b>2020-21</b>
<b>3.</b>	<p><b>Construction of selection indices to select optimum selection index in Mungbean <i>vignaradiata</i> (L.) R. Wilczek</b></p> <p>Broad sense heritability, genotypic coefficient of variation weight and phenotypic Coefficient of variation weight methods manifested more or less same results. Selection index (I2346) depicted higher per cent relative efficiency among all the selection indices excluding grain yield per plant. Therefore selection index (I2346) with combinations of plant height, number of primary branches, days to flowering and clusters per plant is suggested for selection of mungbean genotypes for breeding improvement programme where one of the parents is Meha or GM-4 or Pusa Vishal.</p>	<b>2019-20</b>

## E. Publications

Sr. No.	Publications	Total
1	Practical manuals	4
3	Research papers	35
4	Books/booklets	5
5	Folders	1

### ➤ Distinguishable contribution by faculties

Prof. H. N. Chhatrola made efforts in developing 'HNCANOVA' software packages under Q-base environment for analysis of design of experiments. It is running in DOS mode. The most important feature of the software is that it takes care of the pooled data analysis over the period and location.

### ➤ Distinguishable contribution by Students

One of the PG student Mr. Goyani Zankrut (Regi. No. 2010119033) made a remarkable effort for developing CRAN package (**selection.index**) in R software. The concerned package is released globally on CRAN platform of R-software (Open source) and now it is available in CRAN package directory. It will be benefited to all PG students and researcher Plant/Animal breeding, Agril. Statistics for analysis of Selection Index. He has made this under the guidance & support of Dr. Alok Shrivastava, Associate Professor, Dr. Yogesh A. Garde, Assistant Professor, and Prof. Arvind Chaudhary, Assistant Professor.

**selection.index: Analysis of Selection Index in Plant Breeding**

The aim of most plant breeding programmes is simultaneous improvement of several characters. An objective method involving simultaneous selection for several attributes then becomes necessary. It has been recognised that most rapid improvements in the economic value is expected from selection applied simultaneously to all the characters which determine the economic value of a plant, and appropriate assigned weights to each character according to their economic importance, heritability and correlations between characters. So the selection for economic value is a complex matter. If the component characters are combined together into an index in such a way that when selection is applied to the index, as if index is the character to be improved, most rapid improvement of economic value is expected. Such an index was first proposed by Smith (1937 <[doi:10.1111/j.1469-1809.1936.tb02143.x](https://doi.org/10.1111/j.1469-1809.1936.tb02143.x)>) based on the Fisher's (1936 <[doi:10.1111/j.1469-1809.1936.tb02137.x](https://doi.org/10.1111/j.1469-1809.1936.tb02137.x)>) "discriminant function" Dabholkar (1999 <<https://books.google.co.in/books?id=miFumAX0D0c&pg=PA4&source=Syndol-us&dq=elements%20of%20biometrical%20genetics&lr&pg=PP1#v=onepage&q&f=false>>). In this package selection index is calculated based on the Smith (1937) selection index method.

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 Depends: R (≥ 2.10)  
 Imports: stats  
 Suggests: markdown, knitr, testthat (≥ 3.0.0)  
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 BugReports: <https://github.com/zankrut20/selection.index/issues>  
 License: GPL (≥ 3)  
 URL: <https://github.com/zankrut20/selection.index>