

One recommendation was approved for the Scientific community in the Agresco.

Recommendations (1) Seed hardening with CaCl_2 2% and Cycocel 1000 ppm were found to be superior for all physiological and biochemical parameters in green gram variety GAM-5

ACHIEVEMENTS

Publication / Recommendations / Research / Extension / Award / Project Completed

Student Passed Out- (PG)						
Program	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Masters	03	-	04	03	01	01
Doctorate	02	02	-	02	-	-
	2021--22		2022--23		2023--24	
Masters	01		02		-	
Doctorate	01		01		01	

Students' Achievements (PG)						
Program	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
NET/SLET	-	01	02	04	-	-
GPSC / UPSC	01 (ARS)	-	-	-	-	01
Bank / PSU	-	-	01	-	-	-
Government		02	02	02	01	01
Private			01	01	-	-
Entrepreneur	-	-	-	-	-	-
Awards	-	01	-	-	01	-

Students' Achievements (PG)			
Program	2021--22	2022--23	2023--24
NET/SLET	--	--	01
GPSC / UPSC	01	--	-
Bank / PSU	--	--	01
Government	--	05	--
Private	--	--	--
Entrepreneur	--	--	--
Awards	--	--	03

- **Publication**

List of Research Papers in International Journal

1. **Macwan, S. J.**, Upadhyay, N. V., **Shukla, Y. M.**, & Vaishnav, P. R. (2016), Effect of paclobatrazole and culture vessels on microtuber production in Potato (*Solanum tuberosum* L.) *International Journal of Agriculture Sciences*. 8(54), 2843-2845.
2. **Macwan S. J.**, Vaishnav P. R., **Shukla, Y. M.**, & Upadhyay, N. V. (2016) Effect of nitrate nutrition during *in vitro* phase of potato microtuber production. *International Journal of Agriculture Sciences* 8 (59) : 3298-3300
3. **D.B.Patel**, R.S. Bhadane, J.J.Dhruva and **Y.M.Shukla** (2017). Effect of seed harding chemical on morpho-physiological attributes in Green gram (*Vigna radiata* L.).*International J.of Chemical studies*,5(6).
4. K.R.Prajapati, **D.B.patel**, Patil Kalyan Rao and R.S. Bhadane (2017) Effect of seed harding on morpho-physiological and yield parameters in Black gram (*Vigna mungo* L.). *International J. of Chemical studies*,5(4),439-441.
5. K.R.Prajapati, **D.B.patel**, Patil Kalyan Rao and R.S. Bhadane (2017) Effect of seed harding on seed quality parameters in Black gram (*Vigna mungo* L.).*Trends in Biosciences*,10(27),5839-5841.
6. **S.J Macwan,YM.Shukla**, P.R.Vaishnav and N.V.Upadhyay (2017).Effect of different tuberisation methods for induction of in vitro microtuber in potato (*Solanum tuberosum* L.) *International Journal of Agriculture Sciences*,9 (24):4285-4287

7. **S.J Macwan**, P.R.Vaishnav, N.V.Upadhyay and **YM.Shukla** (2017).Effect of photoperiod and different growth substances on microtuber production of potato (*Solanum tuberosum* L.) International Journal of Agriculture Sciences,9 (27):4349-352
8. **S.J Macwan**, N.V.Upadhyay, **YM.Shukla** and P.R.Vaishnav (2017).Effect of growth regulators on potato microtuber formation and storage effect on microtuber dormancy .International Journal of Agriculture Sciences,9(30):4408-4411
9. **S.J Macwan**, N.V.Upadhyay, **YM.Shukla** and P.R.Vaishnav (2017).Effect of Cultivar, Growth Regulators and CaCl₂ on *In Vitro* Culture of Potato (*Solanum tuberosum* L.) International Journal of Agriculture, Environment and Biotechnology.10(3):283-288
- 10.M.Z. Malek, R.S. Bhadane, **D.B. Patel** &S.N. Tadvī (2018).Effect of micro-nutrients on morpho-physiological, biochemical parameters and yield in black gram (*Vigna mungo* L.). *International journal of chemical studies*.6(3):2418-2421
- 11.M.Z. Malek, R.S. Bhadane, **D.B. Patel** and S.N. Tadvī (2018).Dry matter partitioning in black gram (*Vigna mungo* L.) influenced by micro-nutrients application. *International journal of chemical studies*.6(3):2422-2425
- 12.J.J. Macwan, M.J. Patel,& **S.J. Macwan** (2019) Effect of Plant Growth Regulators on growth, yield and quality of sweet orange [*Citrus sinensis*(L.) Osbeck] CV. Phule Mosambi. *International journal of chemical studies*. 7(4):2086-2089
- 13.Shekhada, R.R., **Macwan, S.J.**, & Motka, G.N. (2021). Effect of phytohormones on morphophysiological parameter of Kalmegh (*Andrographis paniculata* Nees). *International Journal of chemical studies*, 9(2), 400-403
- 14.Rathod, K. D., Patel,M. J., **Macwan, S.J.** & Patel,J. S. (2022).Effect of Biofertilizers and Bioinoculants on Yield and Quality of Mango cv.Mallika. *Biological Forum – An International Journal* ,14(3):1343-1349
- 15.Shekhada, R.R., **Macwan,S.J.** Patel,N. J. & Gajbhiye,N.A. (2022). Role of Growth Regulators on Quality and Yield of Kalmegh (*Andrographis paniculata* Nees). *International Journal of Economic Plants*, 9(4):294-298
- 16.Shekhada, R.R., **Macwan,S.J.** & Singh,T.A. (2022). Paclobutrazole, NAA and GA₃ Effects on Growth and Dry Matter Partitioning of *Andrographis paniculata* Nees. *International Journal of Economic Plants*,9(4):316-322
- 17.Chaudhary,K.B.,Macwan,S.J.,Thounanojam,A.S., & Bhadane,R.S. (2023). Effect of plant growth substances on morphophysiological parameter of green gram (*Vigna radiata* L.).*International Journal for Research Trend and Innovation*,12(8),354-357
- 18.Dabhi,D.M., Patel,M.J.,& Macwan,S.J.,(2023).Effect of organic substance and plant growth regulators on yield attributes and quality of Guava cv Lucknow49.*Bangladesh J.Bot.*,52(4),971-978.

19. Ghadiali, J. J., Macwan, S. J., Bhanvadia, A. S., & Patel, K. S. (2023). Effectiveness of Paclobutrazole application on improvement of groundnut (*Arachis hypogaea* L.) yield under water deficit conditions. *International journal of Plant & Soil Science* 35(23),500-509.
20. Ghadiali, J. J., Macwan, S. J., Shukla, Y. M., & Chaudhary, K. B. (2023). Effect of water stress and paclobutrazole on proline and total antioxidant activity in groundnut (*Arachis hypogaea* L.). *International journal of Plant & Soil Science* 13(12), 586-592.
21. Ghadiali, J. J., Sahoo, C., & Macwan, S. J. (2023). Evaluating effect of boron and molybdenum micronutrient application methods on growth in groundnut (*Arachis hypogaea* L.). *International journal of Plant & Soil Science*, 35(20), 397-409.
22. Saumya S., Trivedi, A., Choudhary, K. B., & Ghadiali, J. J. (2024). Global climate change and its effects on medicinal and aromatic plants. *International Journal of Environment and Climate Change*, 14(2) 149-160.

List of Research Papers Publication in National Journals

1. Kadam S. D., **Shukla Y. M.**, Gupta P., and Zala H. (2015). Studies on the genetic Diversity of wheat genotypes (*Triticum duum* L.) in response to drought stress through isozyme markers. *Indian J. Agric. Biochem.*, 28(1) : 39-47
2. Dhruve J. J., **Shukla Y. M.**, Shah Rutika, Patel Jignesh and Talati J. G. (2015). Contribution of Okra (*Abelmoschus esculntus* L.) seed towards the nutritional characterization. *World J. of pharmacy and pharmaceutical Sciences*, 4(7) : 1009-10023. (ISSN 2278-4357)
3. Das Tania, Meena Mamata and **Shukla Y. M.** (2015). Efficacy of Brassinolide on protein profile by SDS-PAGE and antioxidant enzymes in rice (*Oryza sativa* L.) under saline condition. *Res. J. Agril. Sciences*, 6(4) : 785-790
4. **S.J. Macwan, D.B. Patel** and **Y.M. Shukla** (2018) Physiological investigation on productivity in maize (*Zea mays* L.) genotypes. A ISPP West Zonal seminar on *Emerging Trends in Plant Physiology for Crop Production under Climate Change Scenario* on 4th August, 2018. At M.P.K.V. Rahuri. pp:415
5. Goswami, P. B., Sitapara, H. H. and **Mecwan, S. J.** (2022). Effect of integrated nutrient management on growth and yield of Indian bean (*Dolichos lablab* L.) cv. Gujarat papadi 1, *The Pharma Innovation Journal*, 11(9): 759-763
6. Parmar, F. R., Panchal, B. H., **Macwan, S. J.**, & Patel, S. A. (2022). Effect of packaging materials and calcium chloride on storage and shelf life of broccoli under cold storage condition. *The Pharma Innovation Journal*, SP-11(9), 2278-2284

7. Choudhary, K. B., Macwan, S. J., Dhruv, J. J., Ghadiali J. J., & Saumya Shruti (2023). Impact of Plant growth regulators and chemicals on growth and quality in green gram (*Vigna radiate* L.) cv. *The Pharma Innovation Journal*,12(3),1938-1941
8. Faldu T.A., Trivedi A. P., Chaudhary K. B., Macwan S. J. & Thounaojam, A. S. (2023). Effect of micronutrients and plant growth regulator on grading of bulb, biochemical and mineral components of onion (*Allium cepa* L.) cv. GAWO-2. *The Pharma Innovation Journal* 2023; 12(10), 878-884
9. Patel, K.P., Panchal, B.H., & **Macwan, S.J.** (2023). Effect of Bio-NPK and different level of organic manures on growth, yield and quality of cauliflower (*Brassica oleracea* var botrytis.) var Pusa Snowball K1. *The Pharma Innovation Journal*, 12(9), 1751-1758

- **Book / Book Chapter Published**

A book published entitled "PG Student Research work on plant physiology (1965-2021)" Edited by **Dr. Sunil J. Macwan**

- **List of the Popular Articles**

NIL.

- **Recommendations**

(1) Seed hardening with CaCl₂ 2% and Cycocel 1000 ppm were found to be superior for all physiological and biochemical parameters in green gram variety GAM-5

- **Awards Won by the Faculty**

Name of the Award	Name of the Staff Member	Awarding Agency	Year
-	-	-	-

- **Project Completed : AGRESCO research project concluded time to time**

THRUST AREAS

Thrust Areas of the Department:

- Plant growth and development
- Stress physiology and Plant water relations
- Plant growth regulators and their applications in plant productivity
- Mineral nutrition of crop plants
- Physiological and molecular basis of a plant/crops and

Imparting education to undergraduate and post-graduate students in a plant/crop physiology.

CONTACT

Mo. No.: +91 – 9879468013/7874640628

e-mail: hodphysiol @aau.in/sjmacwan@aau.in

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- 2) Font:** Arial
- 3) Font Size (Heading):** 14
- 4) Font Size (General Matter):** 12
- 5) Spacing:** 1.15
- 6) Border Spacing:** 2 CM (Header + Bottom + Left + Right
- 7) Scan copy of recent passport size photo (600 dpi)**