

## Department of Biochemistry

### Research information made by the department for scientific community (Since 2004):

Sr. No.	Title of Research Information	Year of Research
1.	Brinjal cv. AB 09 1 has higher total carbohydrates and total soluble sugars and Doli-5 has higher amount of ascorbic acid and lower amount of phenol and glycoalkaloids. Both the varieties are more suitable for consumers use as compared to other brinjal genotypes.	2013-14
2.	It is recommended that to avoid adverse effects of drought stress, wheat seeds should be treated with 100 ppm benzyladenine for 6 hr. to retain higher drought tolerant molecules such as moisture, relative water content, total chlorophyll, and total carotenoids with low membrane injury at seven days after germination.	2014-15
3.	Significantly highest content of lysine (0.427%), tryptophan (0.216%), anthocyanin (0.874 mcg%) and total anti-oxidant activity (13.876 mg/100 g.) were observed in eggs of White Leghorn layer birds fed layer mash containing purple colour maize in comparison with white maize (Gujarat Maize-3), yellow maize (Gujarat Anand Yellow Maize Hybrid-1) and High Quality Protein Maize-1 (HQPM-1), which plays an important role in value addition of eggs, increases keeping quality of eggs and helps to prevent mal nutrition.	2015-16
4.	It is recommended that to alleviate adverse effect of water deficit stress, rice seed should be treated with 100 ppm benzyl adenine for 8 hrs. to maintain adequate level of osmolytes such as total soluble sugars, phenols and proline with low membrane injury at ten days after germination.	2016-17

### Contribution in scientific/Farmers Recommendation/ variety evaluation : 80

### Research recommendations made by the department for Farming community (Since 2004) :

Sr. No.	Title of Recommendation	Year of Recommendation
1.	Technology for production of basil powder (2010). The farmers and the agro-processing entrepreneurs interested in the production of dehydrated basil leaves/powder are recommended to use the “Technology for production of dehydrated Basil leaves/powder” developed by Anand Agricultural University. The technology produces superior quality product with higher eugenol content, high chlorophyll content, longer shelf life and sensory score as compared to product obtained by traditional drying.	2010-11
2.	Effect of ethereal and gibberellic acid (GA <sub>3</sub> ) on fruit ripening in chilli crop, cv.GVC-11: The farmers of middle Gujarat agroclimatic Zone –III planting chilli variety GVC 111 for seed production purpose are advised to spray the GA <sub>3</sub> @ 50 mg/l at 45 DATP (ICBR 1:15.8) for getting higher seed yield with better seed quality.	2011-12

3.	Effect of integrated nutrient management through vermicompost on productivity of transplanted pearl millet in summer season : The farmers of middle Gujarat Agro-climatic Zone III growing hybrid transplanted pearl millet in summer season are advised to apply vermicompost @ 2 tones ha-1 and 120 kg nitrogen ha-1 in two equal splits at the time of transplanting and at 30 days after transplanting for securing higher yield, quality and net return.	2012-13
4.	Efficacy of NADEP compost in agro-climatic zone-3 in improving yield and quality of pigeon pea (AVPP-1): The farmers of middle Gujarat Agroclimatic Zone –III growing vegetable pigeon pea var. AVPP-1 are advised to apply 25 kg N ha 1 through 2 t NADEP compost and 500 kg castor cake along with 1 litre Rhizobium culture at sowing for higher yield, better quality and maximum net return with maintaining soil health.	2012-13
5.	Agronomic managements of pigeonpea for yield maximization : The farmers of middle Gujarat Agroclimatic Zone-III growing pigeon pea (variety AGT-2) are advised to fertilize the crop with 20 kg S/ha in the form of gypsum in addition to recommended dose of fertilizer (25:50:0 N:P:K kg/ha) for obtaining higher seed yield, better quality and higher return.	2012-13
6.	Assessment of organic farming and inorganic nutrient supply system on yield and quality of pigeon pea: The farmers of middle Gujarat Agroclimatic Zone – III growing vegetable pigeon pea var. Gujarat Tur-1 (GT-1) are advised to apply 25 kg N ha-1 through 5 t FYM ha-1 at sowing for higher yield and better quality of green pod beside maintaining the soil health	2012-13
7.	વ્હાઈટ લેગહોર્ન લેયર પક્ષીઓ માટેનો મરઘાં આહાર (લેયર મેશ) બનાવવા માટે પીળી મકાઈ (ગુજરાત આણંદ યલો મેઈઝ હાઈબ્રીડ-૧)નો ઉપયોગ કરવાથી સફેદ મકાઈ (ગુજરાત મેઈઝ-૩), હાઈ ક્વોલિટી પ્રોટીન મેઈઝ-૧ (HQPM-1) અને પરપલ મકાઈના ઉપયોગની સરખામણીએ ઈંડાંમાં બીટા કેરોટીન અને પ્રોટીનનું મહત્તમ પ્રમાણ તથા પીળી જરદીમાં ઘટ્ટ પીળો રંગ જોવા મળેલ હતો જે થકી ઈંડાંમાં મૂલ્યવર્ધન તથા ગ્રાહકોની ઘટ્ટ પીળી જરદીવાળા ઈંડાં માટેની અગ્ર પસંદગી મેળવી શકાય છે. આથી મરઘાં આહાર (લેયર મેશ) બનાવવા માટે પીળી મકાઈ (ગુજરાત આણંદ યલો મેઈઝ હાઈબ્રીડ-૧)નો ઉપયોગ કરવાની ભલામણ કરવામાં આવે છે.	2015-16

**Research recommendations made by the department for Industrial community (Since 2004):**

Sr. No.	Title of Recommendation	Year of Recommendation
1.	It is recommended that to obtain higher content of nutraceutical molecules viz., total soluble sugars, total phenols, flavonoids, protein and fiber as well as phenolics viz., ferulic acid, vanilic acid and cinnamic acid, the garden cress leaves can be harvested at 60 days after sowing.	2022-23