Madan Mohan Malaviya’s vision on agriculture education and research

Government of India conferred Bharat Ratna on Pt Madan Mohan Malaviya, the founder of the Banaras Hindu University (BHU). The university will be completing its 100 years in 2016. Malaviya, belonged to the Malwa region near Jhansi, historically known for the first independence movement. Being a son of drought and famine stricken Malva region, Malaviya considered hunger, illiteracy and diseases are curse in society. He dreamed to create a university in one of the oldest learning seats of Varanasi. BHU was founded on Basant Panchmi day when crops are in full bloom in the farmers’ field and plenty of harvested rice in their store. He invited scholars, religious persons, scientists and others from different walks of life on the foundation day of the university to put a firm and deep foundation of knowledge and wisdom. He always inspired and encouraged scholars, men and women to fight against the evil forces. He struggled for the removal of untouchability and served four times president of Indian National Congress. He was called ‘Mahamana’ by Mahatma Gandhi. He also strongly believed that education and research would be incomplete until it finds the solution for the suffering of humanity. He also strongly believed in democracy and fully convinced that good outcome of any research and innovations reinforce the individual freedom and mutual respect with each other in the society.

On many occasions he always emphasized about the self-reliance in agriculture and prosperity of the villages. He firmly believed in religion and at the same time in scientific principles too.

His deep understanding about the complexities of Indian society motivated him for different kinds of education to solve the problem. He tried to establish all possible disciplines of knowledge in one campus to create an interactive synergy and integration of knowledge emerging from different disciplines with its unending dimension. Because of his rural background, he had a strong feeling for improvement in Indian agriculture to solve the hunger, poverty and malnutrition. He was sympathetic towards the farming families who vacated their villages for the establishment of the university.

Malaviya, while staying in Bangalore with Mahatma Gandhi (Figure 1), came across some innovation in the field of animal sciences. He discussed the findings with Gandhi and he was motivated by him to initiate research and innovations. After that, his convictions became strong to create an agricultural research institute in BHU. The foundation for the Agricultural Research Institute was laid with the generous donation of Maharaja Umaid Singh of Jodhpur (Figure 2). Incription of the foundation stone of the Institute of Agricultural Sciences clearly reveals the vision of Malaviya about agriculture education and research. With the starting of Master programme in agricultural research, the Institute of Agricultural Sciences was renamed as College of Agriculture. In 1968 it was renamed as Faculty of Agriculture. With expanded focus in agricultural education and research, the Faculty of Agriculture was reorganized as Institute of Agricultural Sciences in 1980. Currently there are 13 departments, all are engaged in the teaching research and extension.

The Institute is committed for the food security and welfare of the farming community. The Institute collaborated with the Indian Council of Agricultural Research and launched several crop improvement programmes.

Research in the institute mainly focused and engaged in developing seed-driven technology in important crops, i.e. wheat, rice, maize, pea, pigeonpea, lentil and mungbean. Crop improvement programme is science based with multidisciplinary approach. The scientists have identified a number of genes having good adoptive traits such as short duration, resistance against many pest and diseases and physiological traits. All the desired traits were packed together and new seeds with the favourable traits are developed. These new seeds are distributed to farmers after following the proper rules and regulations laid by the Government of India. To pay tribute to Madan Mohan Malaviya all the varieties developed by the agricultural institute have been prefixed ‘Malaviya’ and have became popular brand among the farmers. These varieties are grown in eastern and central India. The wheat variety Malaviya 234 is considered one of mega wheat varieties. It is one of the best

Figure 1. Madan Mohan Malaviya with Mahatma Gandhi.

Figure 2. Foundation stone of Institute of Agriculture Research.
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Anomalous silver concentration in volcano-plutonic rocks

I have read the paper by Bidwai et al.1 and all the references cited therein. I would like to share some of my observations on this manuscript, which may be useful for future research and a meaningful publication. There are some statements in this publication without any supporting references and detailed investigations/review of published literature or documents.

Table 1 (p. 160), in the same row, the number ‘n’ for the area and ‘n’ for the samples for Ag, Th and U are different. In my opinion, such information about samples should be explained clearly.

Moreover, there is an emphasis on anomalous silver concentration in volcano-plutonic rocks of Siwana Ring Complex, Barmer district, Western Rajasthan, found in the range 2–5 ppm, based on the analysis of a total of 41 surface samples from an area measuring 30 km × 25 km. This needs to be validated based on detailed studies. According to the Indian Minerals Yearbook2, more than 85% of the country’s potash, wollastonite, lead, and zinc and silver resources are located in Rajasthan. The state is said to possess a substantial share of the total resources of silver (81%).

The concentration of silver in the US deposits from which silver is economically minable as the principal product at 2001 silver prices was typically about four orders of magnitude greater than the crustal average, or about 700 g/t (i.e. 700 ppm).3 The concentration of silver4 to be recovered as a by-product associated with Zn-Pb-(Ag) deposit of Rampura in Rajasthan is (45 g/t) 45 ppm Ag.

Regarding geochemical anomalies5–7, average crustal values are not useful in defining an anomaly. One needs to establish the regional background. In a deeply weathered or lateritic terrain, the background will be different from that in a terrain comprising, for example, altered volcanic rocks. A threshold relative to the proper background may be defined, which may be the mean plus two standard deviations (SD), making a positive anomaly something in the upper ~2.5%. Even this is controversial.

Rather than using the properties of normal distribution, and estimate dubious parameters like the population mean and SD from data that violate the assumptions of normalcy (e.g. drawn from one population, not skewed, independence of samples from each other, etc.), some workers now prefer using the median