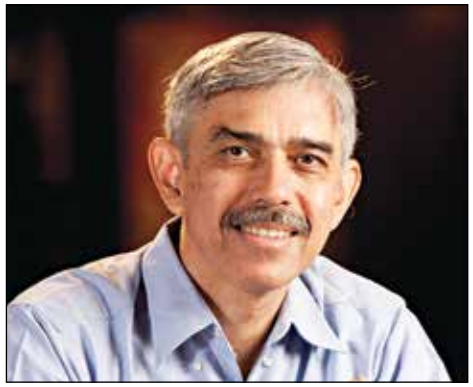
Life Sciences 2011



"Our work is on the basic biology of plant reproduction, but it has important implications on developing new methods in plant breeding. These new methods have the potential to really revolutionize agriculture. The target beneficiary would be the farmer, particularly farmers in developing countries."

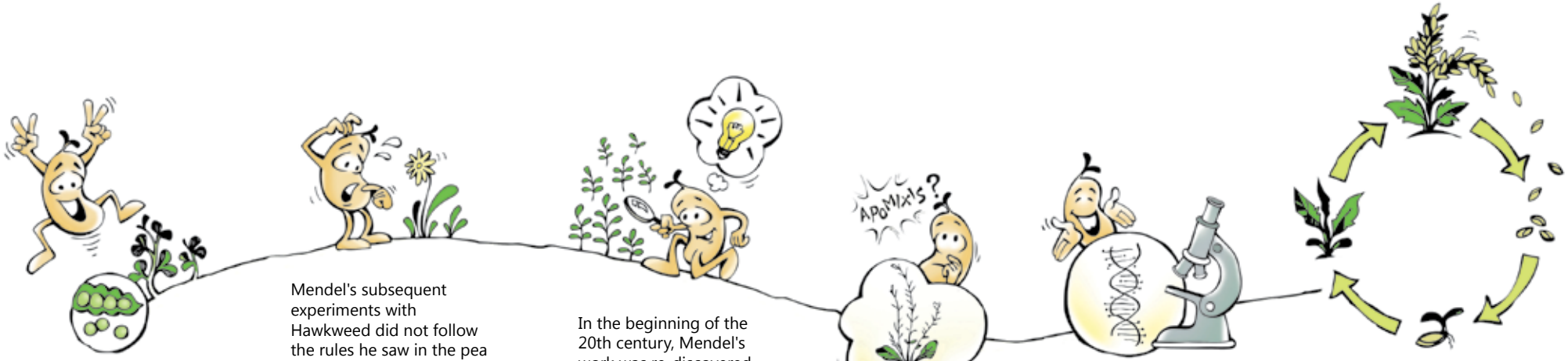
Imran Siddiqi

Chief Scientist, Centre for Cellular and Molecular Biology, Hyderabad

- M.Sc. in Chemistry from the Indian Institute of Technology, Bombay
- Ph.D. in Biology from the University of Oregon

Dr. Imran Siddiqi made breakthrough contributions to the basic understanding of clonal seed formation in plants. Apomixis (asexual reproduction) could revolutionize agriculture for poor farmers in developing countries.

Revolutionizing agriculture through clonal seed formation



In the mid-1800s Gregor Mendel conducted experiments by cross breeding the common pea plant. Through these experiments, he discovered that one could accurately predict which genetic traits parents would pass on to their offspring.

Mendel's subsequent experiments with Hawkweed did not follow the rules he saw in the pea plant because Hawkweed reproduced asexually. He concluded that perhaps his discoveries did not apply universally.

In the beginning of the 20th century, Mendel's work was re-discovered and a phenomenon known as apomixis was recognized and acknowledged. Apomixis is a type of asexual reproduction propagated through seeds and is found in a very small number of plant species.

The process of apomixis ensured the continuance of hardy genes and healthy crops. Now the question was how to bring apomixis into crop plants.

Dr. Imran Siddiqi worked with the plant Arabidopsis thaliana to identify and isolate the genes responsible for apomixes. This discovery could be used to identify the apomixes genes in food crops.

Siddiqi's work could potentially revolutionize agriculture, allowing farmers to be more self-sufficient and clone their own high yielding food crop seeds instead of buying them for each planting.