

Use of Soil Moisture Sensors to Save Water

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Details About the Submission Type

This project was an entry for **CBSE Regional Science Exhibition 2019-2020** held at New Delhi, India, in the category of **Sustainable Agricultural Practices**. Harkriti Gangwani of Grade XII, guided by her Biotechnology teacher, Ms. Yamini Bisht and under the leadership of Principal, Ms. Santosh Vyas from Sadhu Vaswani International School for Girls, worked on the project.

The project was a solution to solve the problem of having a green cover, over a nation, struggling to supply an adequate amount of water to all its farmer- citizens. An automated irrigation system with the help of soil moisture sensors which will help the plants to grow with minimum use of water, was created. A Super Absorbent Polymer in the soil bed was introduced to enhance the water holding capacity of the soil. Plant growth-promoting bacteria was used for priming of seeds that were being used for the project. Usage of such seeds will reduce the amount of pesticides and fertilizers used in the soil bed. Hence, this will help us to maintain the quality of soil and will help in healthy growth of plants. The project won in the Regional Science Exhibition 2019-2020 and qualified for **CBSE National Science Exhibition 2019-2020**. There were 500 different teams from across the nation who competed against one another in this exhibition. The project received great reviews from the Jury and a certificate of participation for the same.

Impact Story

It all started by the setting up of Atal Tinkering Labs in our school. It was a magical place for me, where all my ideas became true with the help of my mentors. I learnt coding and functioning of arduino and tried to integrate it with my ongoing research of super absorbent polymers. Soon I created my first working prototype and showcased in school Science Exhibition. My work was awarded the best exhibit that year. The same year I participated in the **Zonal Science, Mathematics and Environmental Exhibition** organised by **Directorate of Education, Delhi** where again the project bagged the first position and a trophy for the same. The project also qualified for **Central Level Science Exhibition** organised by **Directorate of Education, Delhi** where it bagged a certificate of merit. I kept working on my project and integrated various other components in it to make it even more sustainable for the cities. During this time, I also showcased my project in a **Doordarshan News** series known as GENEXT which was aired on television. Then finally in 11th standard I participated in the **CBSE Regional Science Exhibition 2019-2020**, which was held at New Delhi. On the basis of my latest additions to my project, it won the **Regional** award and finally qualified for participating in **CBSE National Science Exhibition 2019-2020**. I received great reviews from the Jury and a certificate of participation at the National level as well.

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Take Away From the Experience

It is an old saying,

“Try and try until you succeed...”

My teachers taught me to make this saying the motto of my life. There were times when I had to start everything from the scratch, and I was even about to give up at a particular point of my journey but my parents and my teachers encouraged me to keep working. I learnt that honesty and hard work always pay off. Getting the opportunity to participate in **CBSE National's** was the best moment of my life. Winning or losing did not matter to me at that time, just the fact that I was getting an opportunity to compete with the best projects from across the country, filled my heart with joy. These past few years have been a great learning experience for me. Through this project so many avenues opened for me. I learnt various skills which I could not even imagine that I was capable of doing them. Innovation and creativity gave wings to my ideas. There is still a long way to go. I hope to patent my idea and carry out a detailed research in real time scenario and this is the beauty of science -- the possibilities are endless.