

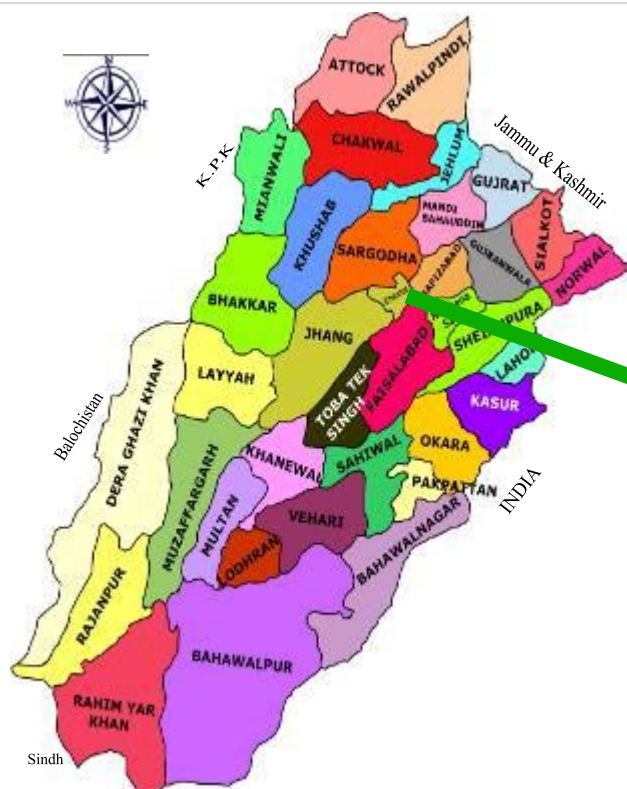
Synergetic Effects of Bio Slurry on Agriculture

A Success Story of Using Bio Slurry Produced from Biogas for Agricultural Needs



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District Wise Map of Punjab (Pakistan)

Beneficiary's Profile

General Info*

Beneficiary	Haji Irshad Ali
Age	80 Years
Occupation	Agriculture & Dairy Farming
Village	Moza Chiniot
Tehsil	Chiniot
District	Chiniot
Province	Punjab, Pakistan



Biogas Plant Info*

Sr.	Type	Size	Date of Construction	Plant I.D/Scheme
Plant # 1	GGC	15m ³	30-12-2011	CNT-P000077
Plant # 2	GGC	15m ³	03-01-2012	CNT-P000078
Plant # 3	GGC (R&D)	50m ³	Under Construction	(Under Construction R&D)

*: As on 18-02-2014

Pakistan is an agricultural country and the nature has provided it with four seasons and main agricultural resources such as arable land and water. The well managed canal system makes Pakistan having World's largest irrigation system. Pakistan's major agriculture products are wheat, cotton, sugarcane, rice they sum a 75% of all crops in Pakistan. The production level enlists Pakistan as one of the largest producer and supplier of wheat, cotton, sugarcane, and rice.

Being vital sector of economy in Pakistan Agriculture accounts 21% in GDP and 41% of labor force. But despite of all these merits Pakistan is facing food crises.

These crises are due to various factors that hinder agriculture in the country such as Some areas have poor soil texture, low average rainfall, lack of modern agricultural technology, inflation and poverty, natural disasters, political instability, and impacts of international market and trades etc. These all factors hinder cultivation that only 27% of arable area is cultivated while the arable area is just limited to 40% of total area of Pakistan.

The challenges faced by agriculture sector not only effect the total economy of the country but the poor farmers all also severely suffering. They are facing basic issues in irrigation, soil fertility, and other energy crises. They are compelled to expense huge amount to deal with these issues. Irrigation is done with using 16 to 36 Horse Power Peter Engines on expensive diesel, Drip Irrigators which are also very expensive, and Petrol-run-generators to overcome electricity issues, while both the diesel and petrol are increasing their prices day by day. Moreover for better growth of corps they use expensive chemical fertilizers that are proven to be hazardous for the arable land for further cultivation on it. These alternate ways and resources are so expensive that the poor farmers can not avail them. Consequently the GDP and GDP per capita remain low.

Research shows that the crops grown on chemical fertilizers may be good in height and look, but they kill the nutrition of the crops. These crops are not even good in taste and may result harm to the user as well. Apart of that the soil gets high of PH level after use of the chemical fertilizers, this eventually ends the fertility of the land and lefts it unsuitable for the next cultivation.



Irrigation through Diesel-Engine-Run Tube well (File Photo)



Irrigation through Drip Irrigation System (File Photo)



Chemical Fertilizers used to grow crops (File Photo)

Haji Irshad Ali of Moza Chiniot, Chiniot is a successful and prospered farmer. Despite of being 80 years old, he is quite courageous and enthusiastic. This is because of his well managed and cost effective cultivation practices. Haji Irshad owns and cultivates 37.5 acres of agricultural land. To enhance growth of his crops he had been using chemical fertilizers. Excessive use of the chemical fertilizers came up with harming results to the land because they increased PH level of the soil. Haji Irshad was very tense and started searching the solutions for the problem. He contacted National Agricultural Research Center (NARC) for asking an appropriate solution to the issue. NARC advised him to use bio slurry (an organic fertilizer) to reduce the PH level of the soil and get better growth of the crops. They advised him to install a biogas plant that exhausts bio slurry as waste after producing biogas.

Haji Irshad approached PDBP that facilitates in construction of biogas plant, technically and financially. He constructed two biogas plants of 15m³ each. The plants began to produce biogas and bio slurry. He made a slurry pit to collect the slurry and channeled it to his agricultural fields. Initially he used the slurry as an experiment that balanced the PH level of his land, nourished and fertilized it for cultivation. At the end of the season he got matchless results in the growth of crops. His crops were flourished having remarkable growth in strength and height and he got good revenue from that crop. Since that time he is using the bio slurry regularly and gaining rapid increase in his revenues. He says that the crops grown with slurry were rich in nutrition and better in taste than those grown with chemical fertilizers.



2 Biogas Plants (15M³ each) constructed in Haji Irshad's Farm House



Bio Slurry channeled to agricultural Farms



Wheat strengthened with bio slurry

Haji Irshad is using the bio slurry mixed with chemical fertilizer in ratio of 50:50. This way he is saving PKRs.600000/month. He is using biogas for running electricity generator as well. He saves PKRs.51000/month for using biogas instead of expensive diesel in the generator. Thus his monthly savings in total goes up to PKRS.651000/ month, and the profits of total cultivation is apart.

Haji Irshad is very excited to benefit from the biogas up to full potential so he has been constructing a new plant sizing 50m^3 . He is constructing this plant under Research and Development Scheme of PDBP that has provided him 80% subsidy amounting PKRs.435000/-. On the new biogas plant he intends to run his 30HP peter engine to strengthen the irrigation system in his farms.



A new plant (50M^3) under construction for running Tubewell on Biogas

Haji Irshad is very happy and enjoying the benefits of biogas plant. He expresses his happiness sharing that he is meeting the entire needs of 21 members in his family. His family is prospered and living in good a standard of life. Haji sahib has got privileged of doing 3 *Hajj* and 9 *Umrachs*. He says that he is very easy and comforted in all aspects of his life. He is enjoying all blessings in his social, cultural, religious and other aspects of life. He intends to continue his pilgrimages to *Makkah* to get privileged with Hajj for the rest of his life. He is motivating other farmers to avail the biogas facility to increase their revenues and the betterment of their lives.