

# Application of Indigenous Knowledge in Agriculture in Pandemic Situation

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## **Abstract:**

This article highlights the social, economic and daily life conditions of the global public during the terrible epidemic of Corona virus that started in Wuhan province of China in December 2019. What kind of problems common people had to face in their daily life during this terrible life-destroying and social-disconnecting epidemic situation that has come down abnormally in the lives of common people all over the world has been highlighted here. Food, drink and shelter are one of the three pillars of people's lives, one of the problems of people during the corona virus was food and what kind of problems arose in the field of farmers and agriculture producing these crops are highlighted here. In this article, the farmers were temporarily deprived of various uses of science and technology in the field of agriculture during the corona period, so the contribution of the indigenous technology and knowledge that the farmers maintained equally in the agricultural field and crop production by using indigenous technology and knowledge as an alternative How it was used in agriculture is presented here. During the Corona period, the public life was disturbed and the common people did not have the supply of various types of chemical substances used daily to maintain the food supply and the prosperity of the crops. However, the advantages and disadvantages faced by farmers in crop production using traditional indigenous methods and knowledge are presented here. The way farmers and their crops did not deprive the common people of food in the quarantine situation during the corona period despite multiple problems is considered as one of the feats to disrupt the public life then and now.

**Keywords:** Pandemic situation, Indigenous knowledge, Agriculture crisis, unemployment, Food supply, Lockdown.

## **Objective of the study:**

1. To find out the problems faced by the farmers during the covid 19 period.
2. To find out how the use of indigenous knowledge helped the farmer at that time.
3. The problem of selling agricultural products in the market was to find out what was the use of indigenous knowledge for long-term storage in those conditions.

## **Methodology:**

This discussion is based on a variety of critical issues. The information for this writing is mainly taken from various published articles, peer-reviewed articles, unpublished non-peer-reviewed articles, newspapers, relevant books, gazette of Ministry of Education, Government of India and internet

**Introduction:**

The continuity and momentum of global development stopped in the first half of the third decade of the 21<sup>st</sup> century. Not only the development, but the daily life of the people comes down to the darkness of an unknown and unknown fear. This terrible disease first appeared in China's Uhan Province in December 2019, which soon spread throughout the world. Our India and China's neighbouring countries in Asia and no country in Europe have been spared from this outbreak. In this context, in April 2020, the chairman of the World Health Organization said that the world's most critical black day after the Second World War has not been seen before. This terrible epidemic is spread by breathing, sneezing and touching. So all the administrations and political leaders of all the countries to get rid of this disease and prevent its outbreak from spreading to others, suddenly there is a panic called global lockdown. Lockdown is actually nothing else, except for emergency goods and health related goods and transport, all kinds of offices, courts, shops, businesses, schools, colleges are closed, common people are in contact with each other, so that nurses stay in their own homes, the supervision of various governments and administrations is known as lockdown. As a result of this loneliness and house arrest among the common people and no source of income at that time started creating economic psychological and social stress among the people. In spite of all these kinds of problems people have to live and to live they need three main pillars which are food, drink and shelter. Water and shelter were available to the people, but due to house arrest, food supply and procurement of foodstuffs became one of the main headaches of the people. But in spite of all this, the common man has got the supply of all types of raw vegetables, meat and other products necessary for death offline and online in various ways. Farmers are the main drivers of these food supplies. Farmers and their agricultural products, to say the least, have provided food for the society and housebound people in this terrible epidemic. However, the farmers need seeds, pesticides, chemical fertilisers, workers and various equipment's with current technology in the field of agriculture, but due to all these house arrests, none of the supplies were sufficient for the farmers. Despite this, the farmers never lacked their production and supplies because of the traditional farming methods and the supply of materials and inputs that brought prosperity to the farmers' production. Evolution over the ages is one of the aspects of the development of civilization, but through this evolution, the arrival of ancient to new civilizations can handle any sudden or sudden situation, but not the current technology and science, but the traditional method and its use, we find proof of it again. Below is a discussion of how farmers and their farming practices have improved and continued production in the face of this deadly epidemic worldwide.

**Covid-19 pandemic:**

As soon as the word 'epidemic' is heard, an impression of surprise and unknown dark fear appears on everyone's face. Because in the past, whenever this word has come out from all corners of the society, people have experienced death agony and suppressed panic. When this word is spread all over the world from the beginning of 2020, people have to face the reality of the past and the memory of the past. In these two years 2020 and 2021, the word "Bandh" comes down in all the cities, villages, offices, courts, schools and colleges of the world. Because the new diseases and epidemics that people have faced in these two years are the corona virus and the lockdown. This lockdown system is for people to stay away from corona virus. As a result of this, everyone from children to old and young women had to stay in their own homes and all kinds of bazaars and shops, all administrative and management work had to be done online from home. Shops were open only for the collection of essential food items and health related items and

materials. This form of terrible loneliness has created all sorts of environments that have come to be known to the public as pandemics.

### **Covid-19 pandemic & Issue:**

The grip of the corona virus has taken the national and international economy to an extreme level of deterioration in education, health, import, export, technology, science and environment. Although the situation is normal now, the impact of all these issues is still being reflected in the people. This terrible obstacle during the Corona period has not only separated people from people, families from relatives and neighbours, everyone. In order to stay away from this terrible disease called corona, the problems that people had to face at that time at every moment in the social life are-

1. All types of workplaces such as offices-courts, schools-colleges, markets-hats etc. were closed due to which people have to face financial problems.
2. Due to the increase in the death rate of people due to corona infection, environmental pollution has to be faced.
3. Lockdown resulted in complete cessation of social interaction with each other resulting in loneliness and social distancing among people.
4. Those who are daily laborers, their families become stagnant. As a result, the number of hungry people is increasing day by day.
5. Due to the closure of all types of markets except daily essentials, there was shortage of various essential products.
6. As a result of the lockdown, transportation from one place to another was completely stopped.
7. Prices of goods rose due to excess supply.
8. Due to the sudden arrival of this epidemic, many people were stuck working from their homes for a long time. Many complications arise in their return home.
9. Many people have died due to lack of food.
10. As a result of this sudden infection, the death of the sole breadwinner in many families leads to unusual poverty in that family.
11. Even though the government and administration took many measures, it was not appropriate.
12. Agriculture is one of the sectors of food supply and the farmers who produce it are not getting proper supply of necessary agricultural materials and materials.
13. Traders and farmers, all face losses due to the suspension of import and export from foreign countries.
14. Even though all the fields were closed, the agricultural field was open but there was not enough labour for it. Many problems are faced due to lack of workers.
15. Supply lines of food and essentials were completely closed.

### **Agriculture and Farming:**

India and its neighbouring countries are all but agricultural majors. Most of the world's agricultural food supply comes from India and its neighbouring countries. But due to the suspension of all types of imports due to the corona pandemic situation, the world has felt its lack. Not only in India but in all the major agricultural countries and regions of the world, farmers are facing losses due to the inability of normal agricultural production and its import tax during this pandemic, many of their crops could not be harvested due to lack of prices and lack of sufficient labour force. The main agricultural crops of India and West Bengal are rice, wheat, jute, tea, potato, onion, betel nut, pumpkin, portal and other vegetables and various

types of flowers, fruits, fish, chicken, sunflower etc. Not only in West Bengal and India, but in all parts of the world, the production areas of all these types of crops are rural areas. In rural areas where farmers toil day and night across vast fields hoping for good harvests and good prices. But during those two years during the corona virus, all the hopes and dreams of the farmers were destroyed. A farmer sees profit only when he can grow good crops but to grow good crops requires good agricultural machinery, technology and necessary agricultural inputs and inputs. But the supply of all these things was not normal during Corona. Therefore, it was not possible to profit from the amount of production of the farmer, which was used for the supply of food products for himself and the surrounding society. This has also been made possible by the use of traditional indigenous knowledge and farming methods.

### **Problems of Agriculture and Farming during Covid-19:**

The lockdown during the Corona period and the pandemic and mental stress created among people to stay away from this infectious disease have had the biggest impact on agriculture. The problems faced by farmers in agriculture are:

1. Seeds are needed to grow new crops and there was a shortage in the supply of those seeds.
2. There was shortage in supply of modern chemical fertilizers and products required for crop maintenance.
3. Pesticides were needed to protect crops from various insects and farmers did not have adequate supply.
4. In order to produce crops, land preparation is required and various types of chemicals required for the preparation of that land were not available in sufficient quantity to the farmers.
5. Suitable and skilled laborers are required for sowing, tending and harvesting of crops. Those laborers were not available in sufficient quantity then.
6. Labour shortage due to house arrest and social distancing and closure of transport communication.
7. There was a lack of vehicles for transporting the crops from the cultivated land to the market, so the crops could not reach the market many times.
8. If the crop is not taken to the market on time, then it needs to be frozen in the cold room and in that case the cold room was not adequate.
9. Apart from some special crops, many crops were not in demand in the market and as a result the farmers had to face losses.
10. Farmers were facing financial problems due to not taking their crops to the market and getting low prices even if they did take them to the market, resulting in shortages in producing new crops.
11. The government and administration could not make any such alternative arrangement for the farmers.
12. Farmers did not get the maintenance of agricultural machinery and equipment as there was no supply in purchasing new ones. So, they have to face another problem in crop production.
13. Due to lack of rain for a few days, there is water shortage in agricultural land and to fill it, electricity or diesel is required to run plods, pumps etc. Farmers faced problems as there was not enough supply.

### **Indigenous knowledge and its Use in Agriculture:**

Since the origin of civilization, the contribution of agriculture and farmers in the social life has been working endlessly to meet the needs of the society. So, the farmers and cultivators who are associated with agriculture are called Chashi Bhai. That is because those who put food in the mouths of every people in urban and suburban areas but those living in rural areas live far away from all kinds of happiness, joy and luxury. Farmers have been around since ancient times of civilization till today but no one from government

administration to modern shiny offices, businessmen, engineers and others think like that. From the Indian Vedic civilization to the Middle Ages and the first half of the modern era, the only tools and resources of the farmer were the traditional agricultural machinery and agricultural methods. Although the impression of the modernization of civilization can be seen in the farmer's house, the use of these modern machinery and methods during the corona epidemic could not be developed in that way, so the farmer's crops to preserve production one has to go back to the methods used and shown by those ancestors. In other words, indigenous and traditional methods and their use by farmers in all fields, which lack technology but are physically possible, can be easily used in places where technology is not used and are also used as an alternative to technology.

The first thing that is required for the production of paddy, wheat, jute and any other type of vegetables and crops is agricultural machinery and equipment. The first stage of any crop production is land preparation and ploughing are the primary requirement for land preparation. Even though there are modern mechanized tractors, power tillers, etc., since the early days of civilization, people have mainly depended on plows made of wood and wood and iron by cows, horses and buffaloes. One of the tools for tillage is the plow which depends on this animal. He can be easily transported anywhere in forests, canals and anyone can plow the land with him. Farmers have used this plough, driven by humans and animals, to prepare land suitable for sowing crops in both dry and water-logged land during the corona situation. Not only for preparing the land but also for providing sedation after sowing the crops, this wood and iron mixed plow is also used for cleaning and cleaning.

Farmers currently use chemical fertilizers and various chemical products to fertilize their agricultural land. But till the advent of chemical fertilizers and products, the farmer grew his crops and fertilized his land depending on domestic animal dung and decomposable organic fertilizers of various types of vegetables, hay etc. Even if it is closed during the corona period Due to the lack of sufficient supply of chemical fertilizers in the situation, he again depends on the ancient traditional sir and compost to grow his crops. To grow a new crop, the farmer has to plant a crop, but to plant that crop, he needs properly treated seeds, and those treated seeds are only available from agricultural fertilizers and factories. But traditionally even before this, when farmers sowed seeds for a new crop, they washed the previous year's seed in the sun and repeatedly treated it with various types of compost and then sowed it as a treatment seed. In the corona situation, the farmers use the domestic seed cleaning method again.

The cultivation of agricultural land by farmers and the growth of sowing seeds is only possible when there is sufficient water. But at present this water is produced by different types of electric powered, petrol powered and gas-powered shallows, deutels, pumps, machines etc. Similarly, there is no system for storing water i.e., rain water and any river water. But earlier when all these facilities were not available then the farmers used to keep small and big different types of pits on the sides and in the middle of the land. He used to dam rivers, canals and ponds well. As a result, rainwater was likely to be retained and subsequently used as required by the farmer. Depending on the knowledge and hard work of those indigenous and traditional farmers, the farmers were able to supply water to their cultivated crops as needed during the Corona situation.

For the farmer to take care of his sown crops and to protect his crops from weeds and other things, there are various types of agricultural weeding machines that are now available, but long before the technology, farmers used to clear their land and weeds with hoes and sickles. Due to the lack of skilled workers to use modern agricultural machinery in the corona situation, they and their families and relatives were able to take care of their crops with the native methods and machinery.



One of the main issues in the care of farmers' sown and agricultural crops is to keep their crops away from various types of insects. Various types of insects destroy agricultural crops completely. So the farmer now sprays insecticides manufactured by various well-known and anonymous companies to protect his crops from these insects. But traditionally, when such pesticides did not appear, farmers used to protect the crops from insects by using various types of animals and bird excrement, waste, dung, chicken excrement, cow urine, etc. on the agricultural crops. All the herbs and disease-free vegetables used to be supplied to the human body. But today agriculture has lost that quality long ago due to the full use of chemicals and pesticides. In the Corona situation, farmers have been able to grow completely silent crops again depending on those traditional indigenous ingredients and methods.

Farmers of different types of raw materials such as those who grow vegetables or engaged in professions like poultry and fish farming are facing the most problems during the corona situation. Because all these crops cannot be kept for a long time in cultivated land or in sheep or poultry farms. If kept for a long time, it is likely to rot or spoil. So, all these vegetables and raw materials need to be stored. Today, due to the technology, those tasks are completed in the freezer, but earlier it was not possible, so the farmers of that time used to arrange a well-equipped cold room and warehouse with straw and various trees and vines to store the vegetables for a long time, and it is possible to keep these vegetables for a long time. Would have been Due to the lack of existing cold storage facilities during the Corona period, farmers were able to preserve their crops in the old-fashioned way.

If the crops produced by the farmers are to be picked up from the land and marketed or stored, suitable experienced and skilled workers are needed, but due to the lockdown system to maintain social distance during the Corona situation, there was a shortage of these workers, so many crops were wasted on the land. But earlier, the farmers did not hire any machinery and workers, their families, relatives, sons and daughters all worked together and they brought home the produce themselves. In the Corona situation, that method becomes usable again and its application is also seen.

Farmers face the most problems in marketing the produce and getting a fair price. Because the market was not open regularly, the market was open for a very short period of time for some essential food items, those crops which required people's hobby and pleasure, the market was completely closed. For example, we can talk about betel cultivation. The condition of these betel nut farmers is worst in the corona situation because no betel nut is sold so the farmer has to remove his betel nut from the betel nut and as a result, they face so much financial loss that they are forced to stop their betel nut farming forever. The government or the local administration was completely silent. Such is the case again with chicken farmers. Chickens raised in poultry farms today do not live long. So due to the market not being fully open, the chicken farmers are not able to sell it and they also face financial loss and many poultry farms are forced to close down. Such a situation has also happened in sugarcane cultivation, flower cultivation, fruit cultivation, jute and tea. In other words, one of the sectors that have suffered the most losses and panic during the corona situation are farmers and farmers. Traditionally, there was no tendency to produce today's commercial crops, when farmers grew crops and imported and exported essential products, but the two were so closely and tightly linked that no epidemic could stop them. In this corona situation, the farmers resumed that intensive import and export relationship in Gram Ganj and as a result they were able to sell their produce to some extent.

One of the problems faced by farmers today is that the land they grow once produces two to three crops in a year and that same crop reduces the fertility and water holding capacity of the land. No one follows any rotation system that way, but from ancient times to pre-modern times, farmers used to grow a variety

of different vegetables, fruits, and flowers crops on a plot of land two to three times a year. As a result, the land and the crops produced by the land would be enriched. Due to the lack of demand for different crops during the Corona situation, farmers reverted back to that rotation system. As a result, the agricultural crops and their quality are two but to some extent people get back.

At present crop sowing means that the seeds are first prepared separately and then transferred to the prepared field. But earlier this system was not there once the land was prepared and the seed was sown and when the seed grew it was cultivated by regular care there was no transfer process. Due to the lack of labour during the corona situation, the farmers reverted to the traditional seedbed farming method. As a result, there is less land use, the farmer's labour is somewhat profitable.

### **Merits:**

1. Use of indigenous technology has reduced costs in agriculture.
2. The quality of land has improved due to the reduction in the use of technology in agriculture.
3. Farmers have regained the traditional tradition of learning agricultural work together as a family.
4. Sub-dependency of agriculture is greatly reduced.
5. Due to the use of non-polluting agricultural machinery, global warming has gone a long way.
6. The use of organic fertilizers and organic pesticides has greatly improved the quality of crops.
7. The farmer learns how to control the sudden environment when it arises.
8. Farmers have learned how to recover from financial losses through the use of indigenous technology.

### **Demerits:**

1. Crop production has decreased
2. Crop production takes more time
3. Farmers see less profit
4. Financial losses due to non-storage of crops.
5. Lack of use of advanced technology has resulted in shortfall in exports.
6. Farmers and agricultural households are emphasizing more on imports than on exports.
7. Due to loss of agricultural crops and lack of demand, agricultural land is turning into factories today.
8. Farmers have not yet been able to rebuild the supply chain due to the breakdown of the supply chain during the Corona situation.
9. Silent role of government has left agriculture far behind

### **Conclusion:**

The developing and underdeveloped countries of the world, which are mainly dependent on agriculture and are not yet self-sufficient in agricultural technology, still to some extent rely on traditional indigenous technology methods and machinery to grow agricultural crops. India, Bangladesh, Nepal, Pakistan and some western countries are one of its examples. The Government of India is constantly releasing new fields of policy and knowledge to develop various types of indigenous technology and knowledge, seeing how farmers have achieved the impossible in the agricultural sector by using indigenous technology and its application. As a result, farmers are benefiting from two aspects 1) Use of indigenous technology 2) Use of modern technology. As a result, a new stage of enthusiasm and success is emerging in the field of agriculture. As a result of which the present government of India has established itself as one of the most exported countries in the world in terms of food exports and all types of agricultural crops.

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