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Research Note

The Effect of Climate on the Growth of Paddy

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Abstract: There is no doubt that climate has affected our agricultural system and the growth of plants in different fields. The climate is continuously changing due to changes in the chemical composition of our atmosphere caused by the emission of different pollutants from different sources. The presence of pollutants in our atmosphere is increasing the global warming which directly affects the change of climate. Here this article will show how the change of climate affects the paddy in their growth.

Introduction

The rapid growth of population is increasing the amount of CO_2 in our atmosphere due to respiration. This should encourage the rapid growth of plants in the different parts of the world and especially in the most populated areas, as we know that plants require CO_2, which is readily available in quantity from our atmosphere, for photosynthesis. The actual situation is the complete reverse of what we would normally expect.

Industrialization increases air pollutants considerably, directly affecting our atmosphere in a somewhat more dangerous way. After industrialization, the level of greenhouse gases doubles. If the elimination is not controlled, then the situation will be exacerbated i.e., tripled by the end of the century. Global warming is increasing in a regular manner. Deforestation allows the ground water to go deeper and deeper in a regular way. This is indirectly, but strongly, affecting irrigation of our farmland. The other factor is global temperature, which is increasing because of the increase in greenhouse gases, and indirectly affecting our climate considerably. The climate of our environment is changing in a regular manner and directly affecting our farmlands. There are different sources for the production of greenhouse gases. We need energy and have to burn fossil fuels which release greenhouse gases, the root cause of global warming. There are different methods used for removing greenhouse gases (mainly CO_2) from the atmosphere. Most of them are not conducive to a good environment and, in my opinion, cannot be considered a long-term solution. The effect of all the above difficulties on paddy are discussed, which should be read with extreme care.

Methods

All experiments were done in different environments on paddy plants. Most of the work was observed by the naked eye in different parts of this local area of Talandia near Nimapara. All the evidence concerning the environment and its effect on plants was observed year-round. Comparing the effects of different environments on paddy plants did all of the analyses. Some scientific reasons about the effect on plants/by plants, by air pollution, has been described in this article. In this experiment, the soil (mostly loamy in nature) and the environment were the same. The site was also well irrigated and three crops are harvested each year until now. The only change was in the climate during 1996-98. Paddies were cultivated in these areas usually at that time during 1997-98. All experiments had been done by physical methods.

Effect of Climate

On Paddy Field

In this experiment it was seen that the crops in these areas grew more during 1997-98 than before 1996 and

after 1998. During 1996-98, it was observed that due to heavy rain, the climate was cooler than normal. All other things i.e., the use of fertilizers, pesticides and seed types were kept the same as before. The production and size of the grains was slightly higher than before. The colour of the straw and its elasticity had both changed (Table 1).

The lands on which paddy was cultivated were the same both before 1996 and after 1998. During the abnormal season 1996-98, the growth of these paddy plants was also unique. This was caused by the heavy rain, which gathered on the land for much of the time, without dissipating due to a lack of drainage facilities. The climate throughout 1997-98 was cooler than before. As a result, the direct evaporation of water from farmland was minimized. So, water only evaporated from farmland indirectly through plants during photosynthesis. The water temperature on the land was higher than the temperature of the surrounding atmosphere due to the fact that water generally retains its heat for a longer time. The reverse was the case before and after the abnormal season. All events (heavy rain) occurred during the growth period of the plants. As a result, there was heavy competition among the paddy plants for the solar energy required for their photosynthesis. Respiration between the soil and the atmosphere more or less stopped due to the bulk of water on the land. The colour and elasticity of the straw had changed because of the high concentration of water and the presence of required metals differed from that present on straw under normal conditions. It is generally observed that during rainy season, the plants grow longer than in the other period and it is clear that there are some other differences between rainwater and irrigation water. It had objected that the rainwater was somewhat more pure than water used for irrigation, which contains some metal compounds not present in rainwater (like Fe). Likewise, there is a temperature difference between rain and irrigation water, rainwater being generally cooler (approx.15 ^{o}C) than the water used for irrigation. The benefits, which we obtain from rainwater, are amazing. The rain grounds any suspended matter present in the atmosphere due to pollution — mainly CO_2 and a few hydrocarbons.

In the case of a highly polluted environment, the air pollutants affect the photosynthesis of plants (http://www.airhead.org) adversely by closing the pores present on leaves. It also damages the chlorophyll present on leaves, which is responsible for photosynthesis. It was clearly observed that when rain occurs early in the day in a polluted environment, it was mostly acidic in nature at the onset. This is happening because air pollutants are washed out of the atmosphere by the rain. It observed that the basic reason for longer growth of these plants during rainy season was that the leaves were washed clean by the rainwater allowing photosynthesis to occur freely without the difficulties inherent in the other season in a polluted environment.

Conclusion

From this, it concludes that it is better to adopt the process of spraying water above the plants on a regular basis, for the removal of suspended air pollutants and the washing of the leaves of the plants. This will result in better production from plants, for the time being, until we have a healthier environment.

Table 1

Year	*L.O.P. (m)*	*N.O.R.*	*% D.D.S.*	*T.W.*	*% D.W.S.*	*Remarks*
1996	0.75	8	70	5	60	It had divisible into small pieces
1997	1.5	8	20	5	15	It had almost same as initial. Only upper part damage
1998	1.6	8	20	5	15	It had almost same as initial. Only upper part damage
1999	1.3	8	60	5	50	It had broken into small pieces
2000	0.80	8	70	5	60	It had broken into small pieces.

The radius of bamboo stick is 2.5 cm on which straw had wound at 360°.
L.O.P. = Length of paddy in metres. N.O.P. = Number of rotation on bamboo stick. % D.D.S. = Percentage of damage in dry state. T.W. = Time in water (Straw present in water). % D.W.S. = Percentage of damage in wet state.