International Journal of Botany Studies
ISSN: 2455-541X, Impact Factor: RJIF 5.12
Received: 04-10-2016; Accepted: 05-11-2016
www.botanyjournals.com
Volume 2; Issue 1; January 2017; Page No. 14-16

Effect of environmental factors on productivity of crop

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Abstract
Crops are affected by environmental factors during its various stages of growth it faces risk due to various reasons most of these reasons are unavoidable and unrespectable. Which include suddenly increases in the temperature, change in Co_2 content, particularly rainfall water supply, Rise in atmospheric temperature will lead to loss of soil moisture and will increase the crop demand for water. The amount and availability of water. Stored in the soil will be affected by changes in both the seasonal and evapotranspiration regimes. Thus this paper presents the impacts of various environmental factors on the productivity of crop.

Keywords: evapotranspiration regimes, crop demand, atmospheric temperature

Introduction
Cropping is practiced over a wide range of agro ecosystem field crops beings grown in climates ranging from very wet to very dry across temperate tropical and semi-arid zones climate change is serious concern today and researchers are affianced in understanding its impact on growth and yield of crop. The effect of interrelationship between the climatic factors like temperature, rainfall, solar radiation Co_2 concentration etc. Changes in regional climate and agricultural production had affected all the countries studies indicated that during the cropping season. Cropping is highly sensitive to climate crop having a limited environment in which they are productive and profitable.

Crops are dependent on light temperature, moisture and carbon dioxide concentration to produce the grains and other crop products that are so essential to our nutrition health and well-being temperature and water supply also vary over the long-term including in response to climatic change with major implications for crop production. Australia has the highest climate variability of any continent in the world and is particularly exposed to climate change. Consequently it is highly suitable for studying the major determinants of climate on crop productivity with the experience and information gained in Australia having rebalance for other cropping countries throughout the world. Professor Henry Nix of the Australian national University proposed three questions that needed to be addressed when considering what crop can be grown where (1) for given crop which areas offers the greatest biophysical advantages. (2) for any given area which crop offers the greatest advantages. (3) for any given crop or area how many productivity be raised and sustained.

The given paper focus on climatic determinants of crop productivity.

Major Climatic Determinants of plant Productivity
Climate is fundamental to crop growth, the rate of growth of roots, stem and leaves depends on the rate of photosynthesis. Which in turn depends on light, temperature, moisture and carbon dioxide. In this topic we explain the climatic factors which affect crop production and growth.

Availability of Water
For survival of life all the living organisms required water the availability of water was the most important environmental factor which limiting the growth and survival of plants according to survey of Brown that water deficits developed in plant tissue when rate of transpiration exceeds. That of water absorption also by the report of riser it is indicated that the relations found between available of soil moisture and production were related to a decrease in the net photosynthesis as leaf water potential decreases.

Potential Decreases
The slayer reported that the most oblivious effect of prolong water stress on shoot development were reduce internodes length and reduce leaf size. Thus the proportion of water is essential for growing of crop & its production it do not have less or not much more than required amount of water.

Significance of Light
Plants are dependent on light for survival which photoautotrophic light is an reliable environmental resource for plant growth decreased light can become a limiting factor to plant growth acc to Brougham that maximum growth result when leaves are dry sufficient to intercept 96% of incoming Solar radiation. Also McCloud and Bula suggested that knowledge of the photoperiod responses of various forage species would facility development of management system that are best adopted to different climatic regions.

Temperature
In the physiological processes of plant, temperature play an important role. It has major role in photosynthesis and respiration and plant growth Temperature is important in controlling phonological changes in development from germination and seedling emergence. Cold temperature can affect plant productivity by delaying initiation of growth in spring, restricting water movement to roots decreasing permeability of the membrane on the root surface and delaying opening of stomata on a daily basis which reduces the duration of daily photosynthesis freezing temperature can also injure and kill plants. Burker et al stated that

freezing injury is a major cause of crop loss and low temperature is reputedly the single most limiting factor to natural plants distribution temperature also has a major influence on the rate of evaporative loss from soil and leaf structure.

Atmosphere

The photosynthesis process of plant are depend on Atmosphere the atmospheric gas like Co_2 and O_2 arethe main source required for photosynthesis and respiration variation in production rate and gas exchange is not always expected since environmental factors affect not only the uptake of carbon but also transport of assimilates and hormonally controlled activities in the plant pollutants or toxic substances also occurs in the atmosphere plants may absorb there substances from air, water or soil, these pollutants are dangerous to plant wind and another component can also affect plant productivity. the main influence of wind are increased evapotranspiration, physical damage to plant.

Fire

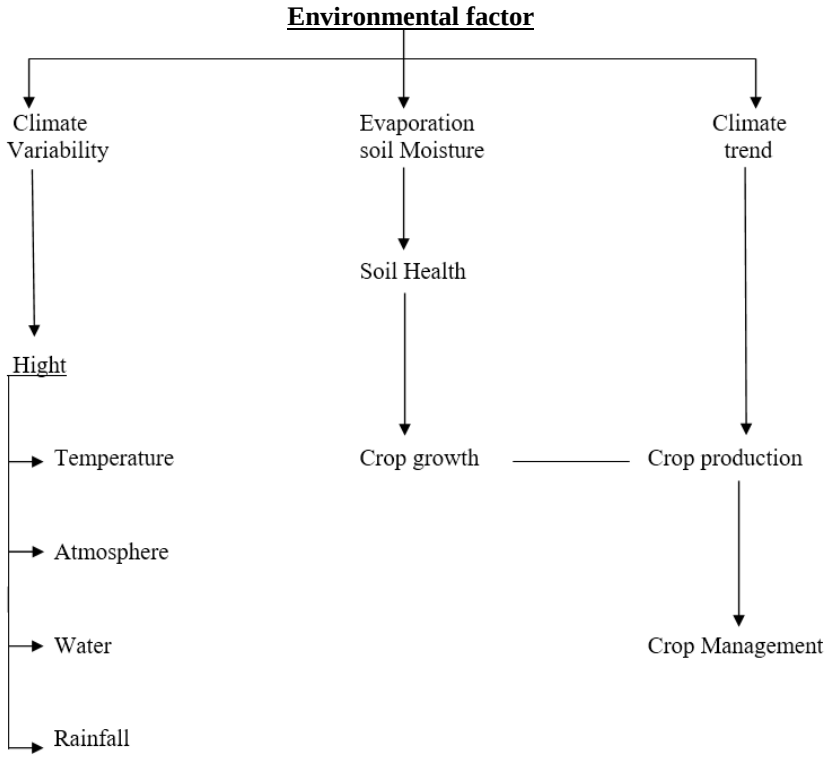
Plant are directly affected by fire acc to scifress that plant response to fire vary with plant morphology and phonological stages of development also young reported that trees and shrubs and some perennial forbs have growing points elevated on aerial stems, and these are often severally damaged by fire the degree of damage sustained by their species is proportional to the temperature and length of time merriestmastic tissue are exposed to elevated temperature.

Nutrients

Nutrients is one of the factors which effect on the plant production nutrients deficiency in the soil resulted into reduction of production nitrogen is the major nutrient which limits plants growth. Growth responses to nitrogen fertilizers can be large but vary with a availability of soil moisture. Phosphorus generally does not significantly affect yield of grassland herbages or plant vigor unless phosphorus is applied along with high rates of nitrogen. In general most cool season grasses respond favorably to nitrogen fertilizer while some warm season grasses do not.

Conclusion

From the present investigation it is seen that the climatic factors should be moreinterrelated for the betterment of the crop yield. Climate change is the most several problem that world is facing today environmental factor such as water, temperature, fire, light, Nutrients are effect on crop productivity.



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