

Class-6 (Agriculture)

Chapter-4

Agriculture and Climate

Lecture-1 Date-29.06.2020

Lesson: 1-2

❖ **Weather:**

- The state of the air and atmosphere at a particular time and place is called weather (the temperature and other outside conditions such as rain, cloudiness, etc. at a particular time and place).
 - It is influenced by the local monsoonal wind blow.
 - Weather is quick changing.
 - It does not influence much on the qualities of the soil.
 - Weather influences the nursing of crops of a particular place.
- ✓ The future information of weather is said to be weather forecast.

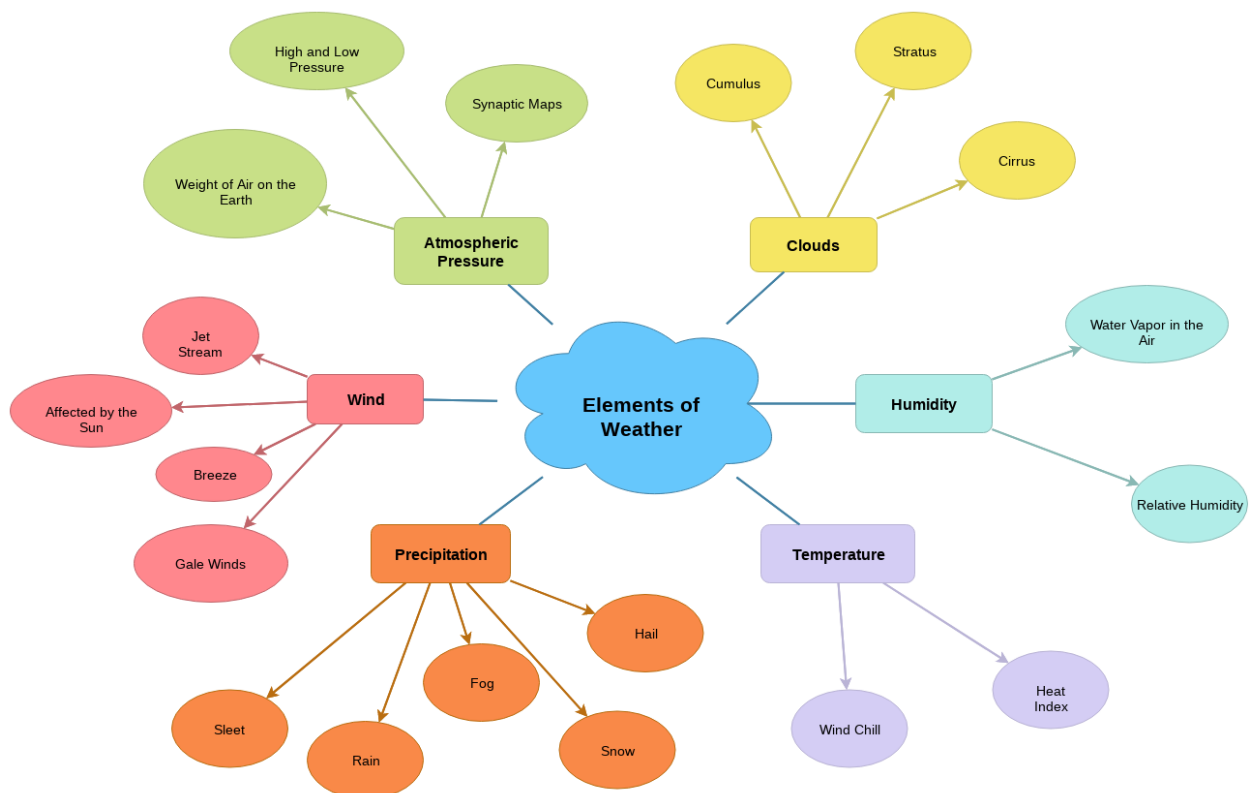


Figure- Elements of weather

❖ **Elements of weather:**

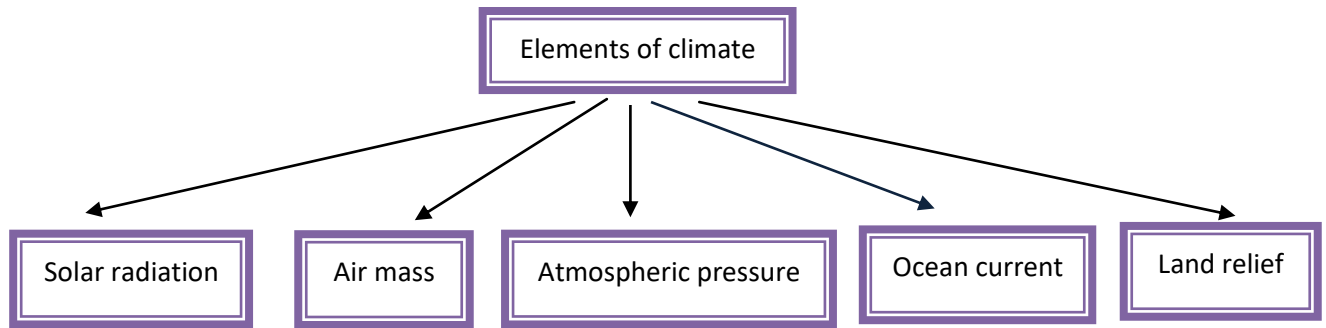
- **Temperature:** how hot or cold; the degree of cold or heat of a place at a particular time is temperature.
- **Precipitation:** It includes rain, snowfall, hail, fog dew etc.
- **Wind:** movement of the air; includes speed and direction of wind.
- **Humidity:** The quantity of vapour in the air.
- **Atmospheric pressure:** The force of the atmosphere that air applies on the surface of the earth.
- **Clouds or cumulus:** It includes the types, quantity, thickness of cloud, coverage and phenomena (like rainbows, lightning etc) of sky.
- **Visibility:** The range of the distance that can be seen with the bare eyes.
- **Sunlight:** The quantity of the light of the sun that we get in a day.

❖ **Climate:**

- Climate is the average condition of the atmosphere in a place for a long time.
- The climate of a place is the average of weathers of the duration of 25-30 years of that place.
- It is slowly changing.
- It influences on the qualities of the soil.
- It influences on the varieties of crops and the selection of breeds of a particular place.

❖ **Elements of climate:**





- **Solar radiation or solar diffusion:** Weather and climate vary on the difference of the availability of solar radiation for differences of places and seasons. Solar radiation controls atmospheric temperatures, water vaporization, mobility of the air, creation of clouds etc.
 - **Air mass:** Accumulated air moves in a particular direction. The weather and climate of a place depend upon the source place of air mass.
 - **Atmospheric pressure process:** The rise and fall of atmospheric pressure influences the seasons of rainfall.
When atmospheric pressure declines, the possibility of cyclones, clouds and storms rises. When atmospheric pressure rises, dry weather persists or prevails.
 - **Ocean current:** Ocean current controls temperature and rainfall of coastal areas. Temperature and rainfall get lower when air blows on cold current. If air current is warm, temperature and rainfall rise.
 - **Land relief or unevenness:** The height of a place from sea-level controls the climate of that place.
If height rises, temperature and atmospheric pressure become lower.
- ❖ **Effect of weather and climate on Crop Production**



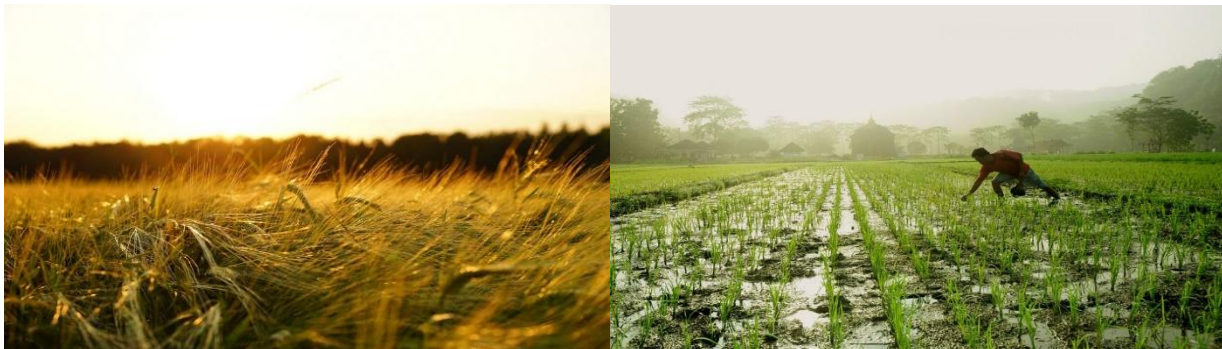
An area's climate affects the types of plants that can grow there. Plant growth is dependent on precipitation and temperature. Some climates are better for growing crops than others. Agriculturally suitable lands have adequate precipitation and moderate temperatures.

Weather and climate play a key role in the success of any agricultural crop yield. Changes in temperature, precipitation, wind, humidity, atmospheric pressure, sunlight etc has a direct impact in the quality and quantity of the product.

Excessive rain, untimely rain, scanty rains with lengthy dry spells, heat and cold waves, storm, high wind and floods are some of the factors to consider.

Farmers are dependent on the monsoon that originates from the Indian and Arabian Sea. When the climate changes, the rainfall cycle, magnitude and the timing of rainfall is altered leaving the farmers unprepared for the change. When the temperature is warm, the water is held in the form of moisture. In arid regions, soil moisture gets evaporated fast leaving less water for crop production. The groundwater level in various areas are also affected with the change in climate.

Wind travels in horizontal motion from a high-pressure area to a low-pressure area. With the variations in temperature and shift in solar radiation, air from high-pressure areas rushes to the low-pressure areas causing horizontal movement of wind. When growing plants are exposed to hot wind, it results in dwarfing due to the desiccation of plant tissue. Wind also increases the crop water requirement due to evapotranspiration and therefore an increased need for irrigation.



Related Questions:

1. What is weather?
2. What is climate?
3. Describe the characteristics of weather and climate.
4. What are the differences between weather and climate?
5. What is called weather forecast?
6. How does weather and climate affect the agricultural productivity?
7. What is the role of solar radiation on climate change?
8. How does the atmospheric pressure influence weather and climate?