

The principles of Crop Production

Growth and Germination

The Fourth part

The first stage of plant growth is the germination of the seed . A seed consists of a small embryo plant with rudimentary roots and leaves, and a supply of plant food which can be made available to the young plant when growth begins. This will feed the young plant during the first stage of its life before it has been able to establish an independent existence. Seeds mature and ripen before they are harvested, and provided they are kept dry and not at too high a temperature, they remain alive but dormant for quite a long time.

Three conditions are necessary before seeds will germinate. The first is a supply of water, which is absorbed by the seed and causes it to swell. Next, the temperature must be high enough to encourage growth to

begin, and to allow the reserve of food in the seed to turn into a soluble form for absorption by the newly developing plant. Lastly, the germinating seed and the growing embryo need a supply of air from which they obtain the oxygen needed for growth, no seed will germinate unless it is provided with water, warmth and air, and the absence of any one of the three will prevent growth from starting. This has an important bearing on farming practice. In the winter, the soil contains an ample supply of moisture, but the temperature is too low to permit of germination. At the height of the summer, the temperature is suitable for germination, but there is every likelihood of an absence of sufficient moisture. Thus the two main seasons for the sowing of farm crops are the autumn and spring.