

**Research Paper :**

## Effect of different mole spacings on the yield of summer groundnut

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### ABSTRACT

The research work carried out earlier has shown the effective installation of mole drains at various depths. The effect of mole drainage system on the crop parameters are studied on summer groundnut. The mole plough manufactured last year studied and evaluated for its performance at various depths. The effect of the mole plough developed needs to be studied from the crop point of view so the present study was undertaken to study the effect of mole drains spacing on summer groundnut yield. A tractor 65 HP was selected to make drains of 2m, 4m and 6m. The effect of mole drain spacing at 2 m, 4 m and 6m plot without drain *i.e.* control were studied by standard procedure and following conclusions were made. The plant height, number of branches per plant, number of pods per plant, weight of pods per plant were highest in 4 m drain spacing followed by 6m, 2m and control plot. The total yield of groundnut was highest in 4m mole spacing followed by 6m, 2m and control and the total yield in 4m drain was 69.20% more than the control.

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**Key words :** Mode drains, Mole drainage system

National commission on Agriculture, Govt. of India (NCA, 1976) defined an area as waterlogged when the water table causes saturation of crop root soil resulting to restriction to air circulation, decline in oxygen and increase in  $\text{CO}_2$  levels.

The physical effects of water logging are lack of aeration in the crop root zone, difficulty in soil workability and deterioration of soil structure. Its chemical effect is soil salination.

### Present status of drainage:

The effects of water logging were observed in the Western Yamuna Canal zone around 1850 AD. In the Deccan plateau, where the Neera irrigation project was commissioned in 1984, water logging started with a few years of starting irrigation.

In many coastal areas excessive groundwater exploitation has caused seawater intrusion, worsening the salinity problem. There are extensive low lying areas in the rice growing coastal belts of eastern and south eastern region of India where poor drainage seriously affects crop production in the monsoon season.

### Different types of drainage system and their cost economics:

The methods can be adopted for reclaiming

waterlogged and salt affected areas are surface drainage, subsurface drainage, vertical and biological drainage.

Structural measures are summarized as surface, sub surface (ground water or tile drainage) and mole drainage.

### Surface drainage:

Surface drainage can be described as (ASAE, 1979) "the removal of excess water from the soil surface in time to prevent damage to crops and to keep from pounding on the soil surface, or in surface drain that are crossed by farm equipment without causing soil erosion."

### Subsurface drainage:

Subsurface drainage (SSD) is the removal of excess of soil in time to prevent damage to the crops because of a high ground water table. Subsurface field drains can be either open ditcher or pip drains pipe drains are installed underground at depths varying from 1 to 3 m. Excess groundwater excess the perforated field drain and flows by gravity to the open or closed collector drain.

### Vertical drainage:

In this method tube well, are to be drilled to lower the ground water table where adequate permeability of soil between the crop root zone and aquifer are available. Vertical drainage is useful where pumped water is