***How is soil pH modified***

A soil pH below about 5.6 is considered low for most crops. Generally, the ideal pH range is between 6.0 and 7.0. Liming (CaCO3) is a common method to increase the pH.

* في الترب الحامضية غالباً ما يستعمل الكلس (lime) لرفع رقم pHوزيادة القاعدية وبالتالي تقليل الحامضية وكما مبين في المعادلة أدناه:

H H H

H H H

دقيقة غروية

H

H

H

H H H

H H H

دقيقة غروية

H

H

H

ففي هذه الحالة يحل الكالسيوم بدلا من الهيدروجين أو الألمنيوم على معقد التبادل وهذا يؤدي إلى إزاحة ايونات الهيدروجين أو الألمنيوم من المعقد إلى المحلول حيث تتفاعل مع أيونات الهيدروكسيل OH الناتجة من تحلل المصلحات (كاربونات الكالسيوم) .

A soil pH that is more than about 8.0 is considered high for most crops. Soils that have a pH in this range are often also calcareous الترب الكلسية اغلبها عند .The presence of carbonates in soil can affect soil productivity by influencing soil pH, structure, WHC (water holding capacity,i.e., The amount of capillary water that is available to plants is the soil’s ‘water holding capacity’ (WHC) or ‘plant available water’ (PAW)) and water flow. Calcareous soils have a high ‘buffering capacity,’ or resistance to changes in pH. This is due to free carbonates being able to effectively neutralize acids in the soil. Thus, the pH of calcareous soils changes very little and is maintained near 8. Because calcareous soils are so well-buffered, reducing the pH with acidifying amendments is often difficult and costly. Acids that are added to the soil dissolve the carbonates and lower the soil pH. Treatments with acid generally are uneconomical for soils that have a content of calcium carbonate of more than about 5%. Because phosphorus, iron, copper, and zinc are less available to plants in calcareous soils, nutrient deficiencies are often apparent.

أما خفض رقم PH في الترب شديدة القاعدية فيتم عن طريق التخلص من أيونات الصوديوم على معقد التبادل ويتم ذلك عادة بإحلال أيونات ثنائي الشحنة كالكالسيوم مثلا محل الصوديوم على معقد التبادل. فإذا أضيف الجبس (CaSO4) أو أي مصدر آخر للكالسيوم الذائب إلى التربة فأن التفاعل سيتم كما في المعادلة التالية:

دقيقة غروية

دقيقة غروية

Na

ملح

**Q1// How does soil pH affect plant growth?**

The pH of an ordinary plant cell is around 6, so soil having more than 8 and less than 5 pH affects plant growth due to alkaline and acidic soils respectively.

### Q2//What causes an increase or decrease of soil pH?

levels of:

* calcium in the soil
* phosphorus
* acidic rain
as well as the soils buffering ability

### Q3// How is limestone used to lower soil pH?

Limestone is basically calcium carbonate, and reacts with acids to form calcium salts plus carbon dioxide plus water. Removal of acids raises pH.

### Q4// what are three things that affect soil pH?

It is rainwater, the use of fertilizer, and the amount of chemical weathering.

### Q5// what soil pH allows you to grow the largest range of plants?

I think its a 7 on the scale but it has to be a neutral pH actually it doesn't. Most plants prefer slightly acidic soil at 5.5-6 pH

### Q6// How do you mulch تغطي with pine needles اوراق الصنوبرto lower the soil pH?

It depends on what you start with and how much to lower. It is a gradual process and should be done on a compost pile كومة سماد عضوي.

**Q7// Lime will raise the soil pH while sulfur will lower the soil pH. True or False?**

Lime does raise the pH level of your soil; however Sulphate is the one that lowers it.

### Q8// what is the ideal soil pH for growing most plants and why?

Some plants require acidic soils. Others prefer pH close to neutral (7.0) and even basic (>7.0). pH will affect the availability of plant nutrients and the solubility of some elements that are toxic to plants. Below a pH of 5.5, aluminum becomes more and more soluble. It is toxic to most plants, except the acid loving plants. It depends upon the plant.

### Q9// How do plants affect soil pH?

Likely make it more acidic because of decomposing organic matter released by dead plants.

### Q10// What are 3 things that affect soil pH?

Acid rain, pollution, and waste

**Q11// What is soil pH?**