

## Lucerne (*Medicago Sativa L.*): Succulent Fodder for Livestock

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### SUMMARY

Termed as Queen of fodder, it is a perennial (3-4 years), persistent, productive and irrigated fodder legume that contains 16 - 20 % crude protein with 72% dry matter digestibility. It helps in soil nitrogen fixation and its deep root system makes it well adapted to dry areas with irrigation facilities. Lucerne is very palatable and nutritious fodder crop for livestock. If animals are given excessive amounts of lucerne grass (in the cob stage), there is a possibility of accumulation of gas in rumen, and this condition is known as bloat. Hence it is advisable fed the crop with dry fodder.

### INTRODUCTION

Lucerne grass is also called 'Alpha-Alpha'. It is an Arabic word meaning 'best'. It is a highly nutritious and perennial cereal crop rich in protein, minerals and vitamins. E.g. - Vitamins- A and D. This is why lucerne grass is called the 'Queen of fodder crops'. Lucerne grass is a dicotyledonous crop with 60 to 90 cm. grows to a height. Properly covered, it will withstand a great deal of adverse conditions. Cold weather favors this crop, so it should be planted between October and November.

### Land and Climate

Lucerne grass can be grown on black productive well drained soils to medium loamy soils. The crop is nutritious in cold climates and can grow well in hot and dry climates. In acidic soils, the yield of this crop is reduced as the germination of seeds in such soils is not uniform and lucerne grass gaps fall at the beginning, so over time the total number of trees decreases and the yield decreases.

### Pre-Cultivation

The crop can be kept for at least three years. A deep plowing should be done to make the soil soft and humus-rich by breaking the lumps and helping to keep the air in it. In high rainfall areas and in black loamy soils, it should not be kept too high. This is because in the rainy season, water is retained in the beds and the grass plants die and the crop becomes sparse. In moderate to low rainfall areas, the ridge and furrows should be kept a little wider and higher than usual.

### Seed Treatment

When sowing grass on one hectare area, mix about 500 gm. of jaggery in 4 liters of water. Boil and cool the mixture and add 3 packets of 'Rhizobium Bacterial Fertilizer' (250 gm. each). Mix this mixture well in finely sieved soil. Then mix this bacterial cultivar with 30 kg seed per hectare and dry it in the shade for a while and then sow.

### Sowing

Lucerne grass should be sown from October to November. 30 kg seed per hectare is sufficient for sowing. Distance between two rows should be 30 cm. This makes intercropping easier. But most of the farmers broadcast the seeds as a result, it takes more seeds, germination is not uniform and further intercropping operations is hampered.

### Improved Seeds

Annual or perennial improved varieties should be selected depending on the soil and climate. Anand-2, Anand-3 and Anand-8 etc. should be used. Fodder Crops Research Project at Mahatma Phule Agricultural University, Rahuri, has been recommended L. - 88 variety at the state and national level and is a perennial income generator.

### Fertilizer Management

In case of perennial forest grass, 10 to 15 tons of well decomposed manure or compost should be mixed per hectare. Apply 20 kg N (43 kg urea), 80 kg P (500 kg single super phosphate) and 40 kg K (66 kg muriate of potash) per hectare. For abundant fodder production from perennial lucerne grass, after four cuttings, weeding should be done and apply 15 kg N (33 kg urea) and 50 kg P (312 kg single super phosphate) or 100 kg D. A. P.

### **Intercultural Operations**

Hand hoeing and weeding after each harvest followed by watering. This helps in keeping the soil moist and keeps the air moving in the soil. Digging adds soil to the trunk area near the roots of the crop and gives impetus to crop growth.

### **Irrigation Management**

Water should be given after 15 to 20 days in winter and 10 to 12 days in summer considering soil moisture. It is very important to manage adequate water in a timely manner considering the soil conditions and seasons. Excessive watering can lead to death of grass seedlings and thinning of grass.

### **Harvesting**

The first harvest should be done 50 to 55 days after sowing. Harvest 5 to 6 cm from the ground. Should be done at height. Care should be taken not to uproot the crop during harvesting. Further cuttings should be done at intervals of 21 to 25 days. In the first year 10 to 11 cuttings are made and in the second year 12 to 14 cuttings are made. In the third year till the end of February for green fodder should be harvested and after the last harvest the crop should be watered for 5 to 6 days. Meanwhile, before weeding and watering, apply 100 kg P / ha (625 kg single super phosphate) and release the crop for watering. After 50% flowering of grass, spray with 2% di-ammonium phosphate. Then spray again with 2% di-ammonium phosphate at 15 days interval. This leads to 20% increase in grass seed production.

### **Production**

Lucerne grass fodder crop produces 120 to 140 tons of green fodder throughout the year.

### **Nutritional Values**

In terms of nutrition, lucerne contains crude protein – 16 – 20 %, crude fat - 2.3%, minerals - 10.99%, crude fiber - 30.13% and carbohydrates - 36.62% (based on dry matter).

### **CONCLUSIONS**

India having huge livestock population. This huge livestock population is increasing in number. This has led to a more pressure on our natural pastures and our grazing lands. This has already led to acute fodder shortage in some regions. This shortage can assume alarming dimensions and a major bottleneck in improving the efficiency of livestock sector. This ultimately will affect the government ambitious programme of doubling farmers' income by the year 2022. Therefore, the immediate attention is needed for re- generation of pasture lands in the country and increase in alfalfa production areas.

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