

“CHIA SEEDS”

Commercial Cultivation

Superfood



CLICK-N-GROW
Agroventures Pvt Ltd

Farmer's e-Buddy

INTRODUCTION

Chia (*Salvia hispanica*) is native to southern Mexico and Guatemala. Mainly it is cultivated for hydrophilic chia, food and seeds. Apart from Mexico, South America, the United States, China, and now this crop has also started flourishing in India. Chia as a food crop gained importance at Mexico between 1500 BC and 900 BC. Nowadays, the cultivation of the Chia crop is prevalent in Mexico, Bolivia, Argentina, Ecuador, and Guatemala. Chia cultivation has also started in parts of Karnataka, Tamil Nadu, Maharashtra, Gujarat, Uttar Pradesh and Rajasthan in India. Its plant is 70-100 cm tall, plant bears purple-white colored flowers. When the crop is in the youth stage, then a unique shade of green and purple color is seen in the field. Its seeds are small (0.8- 1.0 mm thick) black and white in colour.



White seeds have more oil than black seeds. Chia seed farming is a better option to earn good profits. Because at present the demand for chia seeds is very high. According to agricultural experts, the price of this crop is twice the cost of cultivation. Therefore, chia seed farming is proving to be a profitable deal for farmers. In India, chia is being cultivated on a large scale in Madhya Pradesh, Andhra Pradesh, Gujarat, Karnataka, Rajasthan, and Haryana.

USES



Chia seeds are very small in appearance but they contain a whole treasure of health and nutrition.

- Its seeds contain 30-35% high-quality oil which is an excellent source (more than 60%) of Omega-3 and Omega-6 fatty acids. This oil is found to be very good for general health and heart.
- Its seeds also contain a high amount of protein (20-22%), edible fiber (about 40%) and anti-oxidants, mineral salts (calcium, phosphorus, potassium) and vitamins (niacin, riboflavin and thiamine).
- The amount of niacin (B3) vitamin in chia is more than corn, soybean and rice.
- Chia seeds contain six times more calcium, eleven times more phosphorus and four times more potassium than milk.
- Chia seeds can absorb more than 12 times the amount of water of their weight, due to which it is considered more useful for the food industry.
- Food and dishes made from chia seeds are considered an important source of energy.
- The seeds can be used as food grains (bread, porridge or halwa) or by sprouting the seeds and using it as salad.
- Its consumption as a nutritious drink by mixing its powder with milk or buttermilk is also considered good for health.
- Tea made from green fresh or dried leaves of chia is said to be beneficial for health.
- Consumption of chia seeds along with food can help in getting rid of the problem of malnutrition spreading rapidly in many areas of India. Apart from this, its consumption is beneficial for the health of people of all classes.

MEDICINAL USES

- Protein, fat, mineral salts, and vitamins are present in abundant quantities in chia seeds, due to which its consumption strengthens muscles, brain cells, and nervous system.
- Chia seeds contain sufficient amount of antioxidants, which help in removing free radicals from the body, which can prevent heart disease and cancer.
- Omega-3 and Omega-6 fatty acids are found in chia seeds, which prove to be helpful in heart disease and cholesterol problems.
- Regular consumption of chia seeds relieves the problem of inflammation in the body. Chia seeds are proven to help calm hunger and reduce weight.
- Consumption of chia seeds fulfills 18% calcium deficiency in the body, which helps strengthen teeth and bones.
- Its regular consumption is said to be very beneficial for making the skin of the body radiant. It is a useful food for improving the digestive system and also for diabetic patients.



TYPES OF CHIA SEEDS:

There are primarily two types of chia seeds; white and black seeds, although the nutritional differences between the two are so slight that most consider them to be the same.

1) Black Chia Seeds: Black chia seeds have slightly more protein than white seeds and are more productive than the white variety.

2) White Chia Seeds: White seeds have more omega-3 fatty acids than black seeds.

These differences are often very slight and undetectable, but as far as public preference is concerned, black seeds are primarily used as seeds or oil while white seeds make a good flour or meal.

SOIL REQUIREMENT

Chia cultivation can be done successfully in all types of fertile and less fertile lands. To get maximum yield and profit from this crop, cultivation should be done in the scientific way presented below.

CLIMATE

Being a light-sensitive crop, flowering and seed formation in Chia plants is very less in the summer season. It has been found that the best time to sow Chia crop is after June-July in Kharif and October-November in Rabi for better growth of plants and higher yield.

SOWING TIME

In Indian climate, the best time for sowing Chia is between 5th and 25th October. The temperature of 25 to 30 degree Celsius at the time of sowing is most suitable for the best germination of Chia seeds. Although Chia is very sensitive to cold, it likes the cold of December and January. Chia flowers appear in this season and the process of filling grains in the ears starts.

PLANTING

Chia can be sown using a seed drill or a sowing machine. Since chia seeds are very small, some adjustments may be required in the seed drill equipment. To ensure the desired seed rate for sowing, roasted millet can be mixed with chia seeds in the ratio of 7:3. At the time of sowing, the distance between rows should be 30 to 45 cm and the distance between plants should be 30 cm.

SEED RATE

Precise sowing at fixed spacing using a standard seed drill will suffice with a quantity of 5 kg per acre. After germination, spacing of chia plants may need to be corrected once they grow in the field. Two weeks after sowing, the plants are thinned to a distance of 30 cm.

FIELD PREPARATION

After cleaning the field thoroughly, it should be ploughed and levelled. For getting good nutrition and good yield of chia crop, it is very beneficial to apply 10-15 tonnes of well-decomposed farm yard manure per hectare. In light soil, applying 20-30 kg organic nitrogen, 20-25 kg organic phosphorus and 15-20 kg organic potash per hectare at the time of sowing is beneficial for the required growth of the plants. If needed, 10 kg nitrogen per hectare can also be applied after 30-45 days of sowing.



IRRIGATION

Chia must have sufficient soil moisture at the time of sowing for the seeds to germinate. The number of irrigations will depend on the type of soil and the ambient temperature. Generally, 4-5 irrigations are required after sowing in sandy or sandy loam soil. But when the Chia crop is about to ripen, its sensitivity to moisture increases, so do not irrigate during that period.

PROTECTION FROM FROST

The effect of frost has been observed on the Chia crop. Chia is sensitive to the cold of December and January. This causes its tender leaves and emerging ears to turn black. The seed filling and the yield are affected by frost. That's why the soil temperature should be maintained comfortably by doing light surface irrigation.

WEEDING AND PEST CONTROL

Chia itself is a powerful crop. It is not much affected by weeds. Nevertheless, the management of weeds in the early stages of plant development is necessary. Hoeing with tractor-drawn hoe or hand hoe 25-30 days after sowing can control the weed. Chia is not affected by pests and diseases. But many times, when the crop is about to ripen, there is an outbreak of ants on ears. To prevent this, a line of insecticide powder can be made around the field.

HARVESTING

It takes 100 to 120 days for the crop to get ready for harvest. The crop starts flowering within 40-50 days after sowing, the crop matures in 25-30 days after flowering. Chia crop matures completely in 100-120 days. At the time of maturity, the plant and

the ears start turning yellow. Then all its leaves fall off and only ears remain on the stem.

THRESHING AND STORAGE

In developed countries, chia crop is harvested by machines like other small-seeded crops, but in India, the crop is harvested with sickles. After harvesting, seeds are separated by pressing/crushing the Chia ears with wooden sticks. Threshing is also done with a standard thresher using a small screen. By cultivating chia with the advanced production method, yield of 6 to 8 quintals per acre can be obtained. Produce is cleaned and dried seeds can be kept in farm or godown for 3-4 months.



Total Cost Per Acre - 3 months

Particulars	Work	Expenses
Planting material/ seeds	5 kg @ Rs. 1000/- per kg	5,000
Organic Fertilizers	Organic insecticides, growth boosters, etc.	10,000
Other works	Land Preparation, labour, electricity bill, harvesting etc.	10,000
Total expenditure	25,000/-	

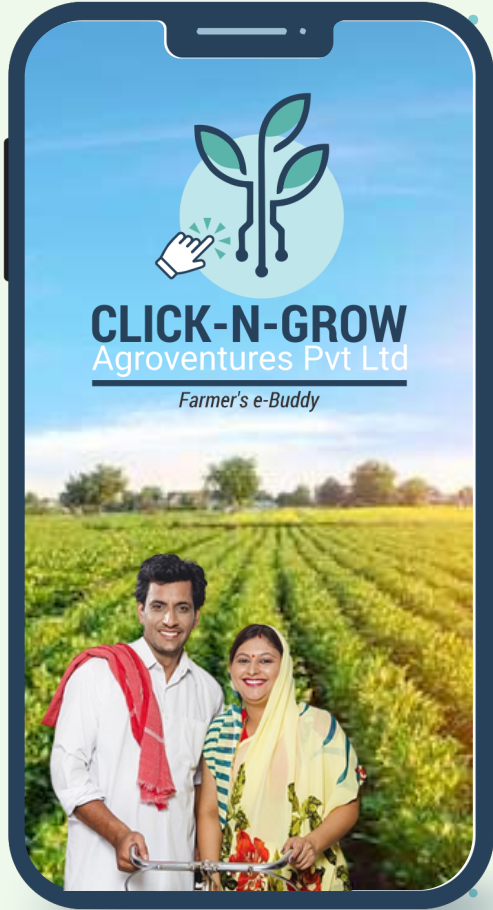
Total Output Per Acre - 3 months

Production	Buy Back Price	Total income
600 kg chia seeds	Rs.130 per kg	Rs. 78,000/-
Total expenditure		Rs. 25,000/-
Net Profit/ income (3 months)		Rs. 53,000/-



COMPANY PROFILE

Click-N-Grow Agroventures Pvt. Ltd.



INTERLINKED FARM SOLUTIONS AT ONE PLACE

Click-N-Grow Agroventures Pvt. Ltd.



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