

Agriculture & Industry Survey

India's Leading Business Magazine for Agriculture

India should matter
in today's world, right?
How far?



Dr. N C Nainwal, General Secretary, WANGAI

Speaks about the richness of walnut and the scope of walnut cultivation in India.



Hitendra Patel, Director, Lemino Agro India Pvt Ltd

One of the successful CEOs in India who has embarked on a journey to try and increase farmers' income. He thus started cultivation of seedless lemons.



Sopan Kanchan, President, Confederation of Indian Horticulture, Grape Grower Association of India

Speaks to us at length about grape cultivation and its nuances.



Dr. Subramani K K, Agri Scientist

"I run an NGO teaching Sanskrit free of cost to girls across the country. I also get these students educated on papaya breeding. Papaya Breeding is the income source that keeps this NGO afloat."



Seeds

Dr. Subramani K K

Agri Scientist

Avinash K S

Founder – Agrimaa Bioscience

Dr. Subramani passed his B.Sc and M.Sc Agriculture from the University of Agriculture, Bangalore. He then worked as a Horticulturist with the Government of India with SFCI Tamil Nadu. After that he pursued his PhD and got into vegetable breeding and was the owner of a seed company. Today, he runs an NGO.

His Son Avinash KS got into the business of Seed Specifically Papaya in the Brand of Agrimaa Bioscience & Vivanta Seeds Pvt Ltd as there are a very few companies focused in Papaya Crop & the Requirement of Papaya seeds by the Indian farmers is big .

“I run an NGO teaching Sanskrit free of cost to girls across the country. I also get these students educated on papaya breeding. Papaya Breeding is the income source that keeps this NGO afloat.” – Dr Subramani KK

Why Papaya?

Papaya is a fantastic crop for the Indian climatic conditions. It can be grown throughout the year. 2-3 decades ago papaya was a neglected crop but with research its value has gone up. Ever since Taiwan introduced their variety, papaya's popularity shot up because of its color, taste, shelf life etc. Now papaya

is cultivated in lakhs of hectares of land as a main crop. We also have it in many fields as an intercrop.

Today India is the highest producer of Papaya followed by Mexico. Other western countries are at a disadvantage when it comes to papaya because it cannot be grown round the year owing to their cold winters. Papaya is being used as a value added produce after the 4th harvest - papaya candy, dried papaya, papaya jam etc. The fruit itself has a huge potential for export mainly to the Middle East. During the Ramdan time, there is a huge demand for Papaya. In short, Papaya has high potential and is a highly profitable crop. Papaya fruit has lot of Medicinal / Health benefits that aids in good digestion & wide Industrial usage Domestically & Internationally.

Being a scientist and plant breeder, it perplexed me that we had only one suitable variety in Papaya & it is 100% imported & INDIA is dependant on a Single Nation for the seeds being one of the Largest Producers of Papaya . So, I took it as a challenge to develop an Indian Papaya version which could possibly replace the imported version of papaya. Since the last year we have launched another breed called F1 Agrimaa Red Glory 186 (Vivanta Red Prince) through our company Agrimaa and have delivered it to the government personnel. We have now exported the seeds to Mexico, US, Africa, etc.



Even in India we are cultivating this breed on a large scale in many places. The Positive response towards our product is increasing Day by Day.

The Taiwan Hybrid and the Agrimaa Red Glory 186 is highly tolerant to ring spot virus, which is a global phenomenon.

Globally, among farmers, there is a huge demand for female produce - the round variety and herma/bisexual variety which is oblong. There is no demand for the male version as it does not bear any fruits. Papaya plants can give 70-80 fruits weighing an average of 1 kilo to 1.5 kilo per fruit in a period of one and half years if the Farmer manages the crop very well.

This can fetch you an approximate income of 7 lakhs in 18 months per acre. Cost of production will come around 2 - 2.5 lakhs with the best agri practices. That is a net profit of 4-5 lakhs from one acre of papaya cultivation. People usually prefer shipping it to North India - Delhi Kolkata, Maharashtra etc. Also, exporting is a viable option.

Which variety is best suited for Tamil Nadu?

For Tamil Nadu all the varieties are recommended. In particular, red lady is very popular. The variety agrimaa red glory 186 (Vivanta Red Prince) is also absolutely recommended for both latex extraction which can be sold for tutti fruity development which is huge in Tamil Nadu.

What is the export rate?

Per fruit you can expect a net profit of Rs.20-30 after all expenses with strict Fruit Quality parameters which can be achieved with very good Cultivation practices. In India, the rate is Rs.10-12 per kg. Only red lady and now Agrimaa red glory 186 can be exported.

Do you help with marketing papaya produce?

I am a scientist, so no. Also, marketing the produce is the burning issue for all produce across India. Everybody is willing to experiment but nobody is willing to guarantee marketing even before the pandemic situation we have now. Marketing is a puzzle each farmer will have to crack.



Do you foresee any change in terms of production area with respect to papayas?

This is a period of high uncertainty for everybody including farmers. Owing to the uncertainty yes, cultivation areas are shrinking because of the fear that prevails. But smart farmers will take this shrinkage as an opportunity to play their cards better. It depends on how each farmer processes their thoughts. Also, the Agriculture Produce (Fruits, Vegetables, Pulses) will increase rapidly as Everyday we have increase in consumption. Agriculture / Food is Staple to the Mankind.

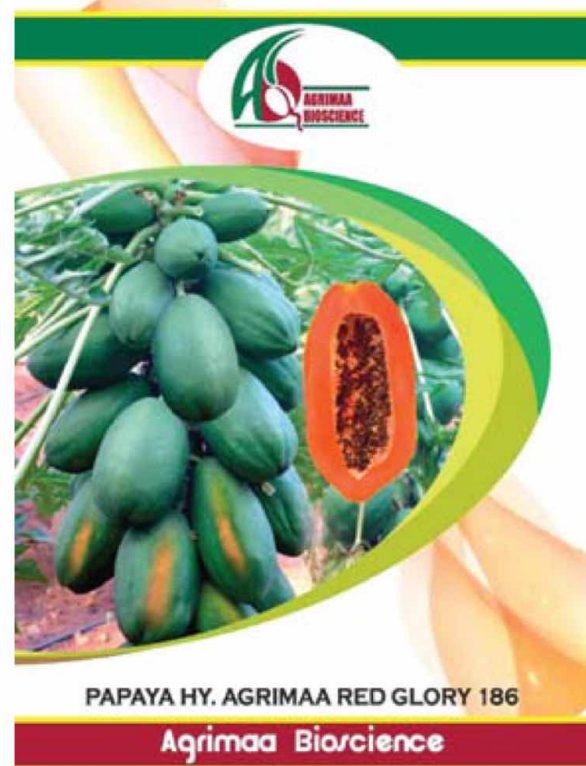
How can papayas be best grown in North India - Punjab and Haryana belt?

These regions have extreme climate. Papaya cannot tolerate extreme temperature - it can neither take extreme heat nor extreme cold climates. South India has a very equitable climate and hence it can be grown round the year. So, in North India it is recommended to grow papaya after the winter season passes out - that is after Feb - March the nursery activities should begin. By May-June the seedlings should be ready to be cultivated and then by year end you can harvest. Seeds of Agrimaa Red Glory 186 is available in seed markets. You can get to see the plant varieties in Jharkhand, UP, Madhyapradesh

and Bihar. It is successfully growing in these areas provided you take care of the time period to sow. The planting density should be around 6.5 ft row to row & plant to plant

What is the life of the papaya plant?

Given you are providing the best agro practices, the life of a papaya plant is



PAPAYA HY. AGRIMAA RED GLORY 186

Agrimaa Bioscience

Quality Seeds for Quality Lives



2 years. The first fruits begin from the 8th month and it will bear fruits continuously upto 1 and half years from the date of transplanting. After that, even in the last 6 months you get very good fruits.

Do you have any technology for processing fruits into value-added products?

This crop is highly suited for turning into value added products. I am told that in a place called Palacode in Dharmapuri District they have installed the government of India subsidy funds for papaya drying machines.

Farmers can give their papayas there and within 8 hours the papaya fruits can be reduced to dried papaya, stored and sold within 2 years time abroad or in the local market without sugar or preservatives. Papaya jam is in huge demand. I visited CFTRI, Mysore. They make Papaya Jam using organic jaggery. This is in high demand in the UK. Likewise, there is huge potential. Also, if Mexico

is delivering papaya fruit around the globe, so can India. Nowadays, the government of India is providing a lot of funds for post harvest technologies.

Do you supply papaya plant saplings?

I run an education institution for girls and they have first hand experience in papaya breeding, cultivation, seed extraction, packing. They raise papaya seedling on order and supply it to many places across India. It is supplied at Rs.10 and this money is used for the benefit of students. They earn while they learn.

Is the Agrimaa Red Glory 186 version suitable for Madhya Pradesh?

Yes, we have supplied to Madhya Pradesh already and it is coming up very successfully.

Is Agrimaa Red Glory 186 resistant from ring spot virus?

To come up with a resistant version,

will take some more time. I am currently working on that. Very shortly, I will come up with a highly resistant variety. At present it is highly tolerant but not totally resistant. Despite virus attacks you can get a good yield.

We have a Yellow Flesh Papaya AGRI-MAA YELLOW QUEEN which we will launch shortly which has excellent taste, Yield & Highly Resistant to Ringspot Virus. It can be even alternative to the massive Mango Pulp Industry such high quality is the product.

What can we do to improve the number of flowers in a papaya plant?

Papaya flower dropping can be due to different factors like high temperature or excess water / rain sticky soil. Papaya grows in black sticky soil but flower dropping is a risk. Black soil retains too much moisture which hinders the nutrient intake of the plant & Moist Soil can increase the Fungal & Stem rot problems. Provide the crop with enough organic matter. This will enhance the flowering.

How is the Red Glory version superior to the Red Lady version?

Both these versions are highly identical. They look alike. The difference is when you cut the fruit, the pulp of red glory is thick compared to red lady. This pulp thickness gives you 20% more weightage than the red lady and it's shelf life is also better. Other than that everything is the same - the looks, the taste, the keeping time etc.

What fertilizers are required to be given to the crop?

Agriculture is an ocean and being a plant breeder I am not quite the right person for this question. But I do vouch for the fact that papaya requires excess organic manure like cow dung or vermicompost especially liquid vermicompost (amruthajalam). People tend to make a big pit, deposit all the organic matter and then plant the plants above



it. That is a wrong practice. First, the plant has to start developing roots and once the roots run deep the fertilizers should be given.

What are the problem areas and mitigation options in papaya cultivation?

Availability of genuine seeds was a big question for the last 30 years. Now it is mitigated. Owing to this non availability, nursery men started mixing up hybrid seeds with segregated material. This led to the destruction of the papaya cultivation because quality was lost and it led to 50% germination. Monopoly of Foreign Company is there as Farmers don't have any options as alternative. Now, this is solved since hybrid seeds are available in India.

Currently, there are two areas where farmers may face an issue:

1. The papaya seeds cannot be stored for a long time. Papaya seed viability is only between 1-8 months because it has oil content in it. This one challenge farmers should be aware of so that you can always procure fresh seeds for cultivation and immediately upon purchase it must be sown.
2. Another factor is that the crop needs water but water stagnation should not be there.
3. Also, the crop requires heavy organic manure. You can dump organic manure into the soil for papaya, it will happily feed on it. After eating papaya if you throw the seeds to where you dump natural waste, the papaya plant will tend to grow.
4. Farmers should plan for the harvest which will fetch them a good yield. For example, Ramzan, Dusshera etc should be kept in mind while planting papaya. The fruit is on high demand during this time.
5. Ringspot Virus Management with Excellent Cultivation Practices is the key to overcome the Virus or any other Disease Problems

What could be the ideal time for transplanting papaya plants?

As a thumb rule it is before winter starts, papaya should have gone into the main field and should have reached the

first flowering stage. That is, it should have attained stability. This way during winter, the flowering develops and the fruits will begin setting. Before summer, the fruits should have been set and the farmer will be able to gain good returns.

Is high density plantation recommended for papaya?

Papaya needs direct sunlight and will not tolerate any kind of shade. A leaf of one plant should not overlap with the leaf of another because they need heavy photosynthesis which will enable them to bear 70-80 fruits per plant. Therefore, the spacing should be sufficient so that leaves do not overlap.

How do we procure seeds and how much will we need for an acre of plantation?

For one acre we will need around 20 grams of seeds. You may contact us through our website to procure seeds. Email : agrimaabioscience@gmail.com

Would you recommend an agricultural newbie to start with papaya farming?

Oh yes! I would highly recommend it.

What technologies would you recommend for harvesting papaya?

This is again not a question for a scientist. But in general harvesting should be done when you see a yellow streak on the fruits so that it can withstand 7-8 days of transportation to Delhi, Kolkata etc. The harvesting is done manually. Right now I don't think there is any other alternative.

Up to what height would a papaya plant grow?

It is a medium height plant. The lowest fruit will be about 1 feet above the soil and the highest fruit will not be more than 5.5 feet above the soil.

Is there any literature available as reference for planters?

As suppliers, we also give planting details and tips along with the seeds, to support farmers. This is available in Hindi and English. You can also email us your questions.



Should we replant papaya after 2 years?

We don't advocate crop after crop because the soil would be exhausted supporting papaya plants. There are chances for nutrition drain after one session of the crop. Also, the virus can be a bigger threat if you continuously replant the same type of crop. We always recommend crop rotation. This way soil will be replenished. If Papaya only is to be planted New pits for transplanting has to be done in the field.

Is the Agrima Red Glory 186 version resistant to nematodes, mites, aphids etc.?

The Agrima Red Glory 186 version is like any other papaya hybrid. These insects you mentioned are all entomological aspects. When a plant is very healthy, it usually will not attract any insects. Insects attack a plant when it is weak. Even then, some amount of insects may attack it. But overall papaya requires very less amount of insecticides/pesticides. Also, nematode has nothing to do with papaya. It is an issue affecting the soil. This can be solved only by amending the soil.

CONTACT :
Dr.Subramani K K
agrimaabioscience@gmail.com