Volume VI - Issue 7, 2018.

Agri-Business Supplement
Zarai Taraqiati Bank Limited.

OREGANO CULTIVATION AND USES

Oregano is a perennial herb with rose-purple or white flowers and a taste reminiscent of thyme. Oregano's taste is zesty and strong and is commonly used in Italian dishes. It is a hardy plant and makes a good ground cover. Oregano can be grown from seeds or clippings, so if you already have some oregano plants, than you should plant clippings instead of buying new seeds. When using seeds, you can generally expect that roughly ¼ of the seeds won't grow, so you may want to plant several. Clippings should only be taken from established plants. You should wait until the roots of plants are well developed and new growth begins appearing before taking clippings.

Oregano is a plant that loves sunshine and well drained soil, so you should choose a planting location that has these two features. If you live in a colder part of the world, you need to start your plant indoors and transfer it outside when the weather warms up. Oregano grows best in moderately fertilized soil. It's unlikely that you'll need to add compost or fertilizer for it to grow well.

A fully grown oregano plant will be about 2 to 2½ ft tall (61 to 76 cm) and about 2 ft wide (61 cm). For best results in your garden, you should give your oregano about 10 in (25 cm) of space between plants. If you plan on growing your oregano indoors, choose a pot that is about 1 ft (30.5 cm) in diameter. This way your plant has adequate room to grow. You can plant your oregano as early as 6 to 10 weeks before the last predicted frost of spring. However, in colder regions or during a cold snap, you may want to protect your plants with a layer of hay. In place of hay, you can also use bed sheets, blankets, or plastic sheeting. To prevent damage to budding plants, you can use stakes to prop up your covering.

Once the sun has risen and air get warm, you should remove your covering from the plants. When using hay, you should remove it from covering plants after frost season.

Planting Oregano: Plant seeds about ¼ inch (0.64 cm) deep and bury clippings ½ inch (1.3 cm) deep. You should be patient while awaiting your plants to emerge from the ground since seeds often sprout slowly, though indoor planting may see seeds sprout in less time.

Avoid attempting to use seeds that have been stored for long periods of time. As time passes, the chances of seed dormency become increases. Seeds usually take 5 to 10 days to germinate from the ground. However, oregano may take more or less time depending on factors like soil quality, sunlight, and frequency of watering.

Water Oregano Moderately: During the first few months of growth, irrigate plants regularly to get them started. Once they are established, amount of water can be reduced. Check whether plant needs water or not by touching the soil around it. If it feels dry, thoroughly water the area. Plants in containers should be treated similarly to outdoor grown oregano. However, when watering, douse the plant until you notice water dripping from the drainage holes in the bottom of the container.

Prune Oregano for Thicker Growth: By prunning or pinching the leaves and ends of plant, you can encourage the growth of denser leaves. Wait until the plant attain 4 in (10.2 cm) height, and use a pair of shears or scissors to lightly thin the outer growth. Prunning also helps to prevent excessive stem growth in plant. This condition, called legginess, will reduce the yield of crop. When you prune plant, its branches continue growing. In turn, these branches will bear more leaves,

meaning more oregano for you. As you prune, fresh oregano can be used in a recipe, or can be dried to be used later on.

Remove Older Plants: Sick or thin plants can crowd better ones and steal resources, negatively impacting the potential of the healthier plants. Plants that are three or four years old are at the end of their life cycle become less productive, this situation makes them prime candidates for removal from population. You may not remember which plants are old and which are young. In this case, you should wait until early spring when you should be able to judge the plant's age by its initial growth.

Harvest/Storage: The flavor of oregano is most intense in mid-summer, just before it blooms, making this the best time to harvest leaves for drying. For a big harvest, cut the stems just above the plant's lowest set of leaves; this encourages new growth for the next cutting in late summer. Oregano leaves may be dried, frozen, or refrigerated.

Recommended Varieties

- Greek oregano *(Origanum vulgare var. hirtum)* used for cooking.
- Common oregano for decoration (its lavender flowers look pretty in the garden and are also used in wreaths).

Pests/Diseases

- Root and stem rots
- Aphids
- Spider mites

Uses of Oregano

Oregano is a culinary herb, used for the flavor of its leaves. It has an aromatic, warm, and slightly bitter taste, which can vary in intensity. Oregano's most prominent modern use is as the staple herb of Italian-American cuisine. It is most frequently used with roasted, fried, or grilled vegetables, meat, and fish. Oregano combines well with spicy foods popular in southern Italy. The herb is also being widely used in cuisines of the Mediterranean Basin. Oregano is mostly used for flavoring meat, especially for mutton and lamb. In barbecue and kebab restaurants, it can be usually found as a condiment, together with paprika, salt, and pepper. Oregano essential oil is extracted from the leaves of the oregano plant. Oregano or its oil may be used as a dietary supplement.

Sources

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HERB PRODUCTION, VALUE ADDITION & MARKETING

Herbs production, processing, packaging and marketing envisages the farming of herb, followed by processing, packaging and then distribution or supply to the consumer market. In Pakistan **Herbs cultivation** is mostly carried out at areas where Mediterranean environment with marginal land is common such as northern Punjab, Murree Hills, KPK, Azad Kashmir, Northern Areas, and upland Baluchistan are suitable for English herb production such as Thyme, Oregano, Rosemary, Chamomile and lemon balm mint.

The marketing of herbs and herb products follows the traditional distribution channel, through middlemen or wholesalers at farm who identifies potential buyers or directly to retailers in urban markets. The time spent in transportation, from farm to the retail shop, varies from area to area. Over the years, collection and transportation of goods have improved with the use of loader vehicles. The key factors in marketing are availability of current market information, quality of product and supply & demand which will determine the selling price.

Pakistan largely exports crude plant material which has low market value in the international martket. On the other hand, we import finished products with heavy burden on foreign exchange. Price difference between crude plant material and processed extracts is enormous. Recently, there is tremendous rise in demand of finished herbal products in the global market.

Today, Pakistan ranks at 9th position in world trade of herbs with an export of 13.965 m ton of herb raw material with a value 14.9 US$. There is a huge opportunity of export of herbs after value addition and earn foreign exchange.

Critical Factors

Individuals considering entering the herb industry must carefully consider the following factors:

1. Access to good knowledge about herb crops and their production technologies.

2. Networking with the herb suppliers from all over

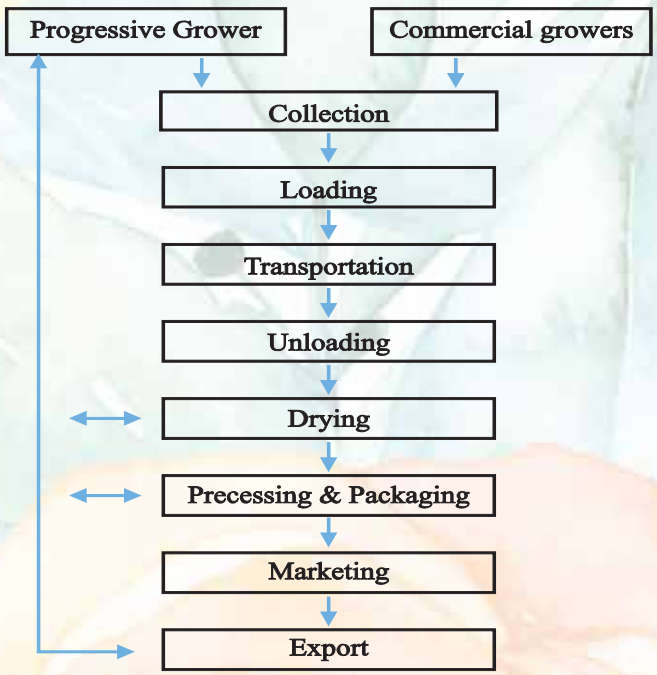
the country would be necessary to meet any excess requirement or shortfall.

3. Consistent supply of herbs from the production facility to packaging facility and to fulfill market demands.

4. Availability of skilled manpower

5. Wholesaler contracts

Herbs Value Chain Flow Chart



Project Cost Summary

A detailed financial model had been developed by PARC Islamabad in a pre-feasibility report to analyze the commercial viability of Herb Production, Value Addition & Marketing under the 'Prime Minister's Youth Business Loan' program, 2014. Various cost and revenue related assumptions along with results of the analysis are outlined in this section.

Factors that influence the profitability of cultivation and production of herbs include farm management, quality of inputs and environmental factors.

Following requirements had been identified for operations of the proposed business:

Project Cost

Capital Investment	Amount (Rupees)
Capital Cost (one time investment)	611,250
Initial Operational Cost for 1st year	956,838
Total	1,568,088

Project Economics

All figures in the financial model had been calculated for commercial production of four herbs at one acre area that results in production of approximately 719000 herbal tea sachets with sale revenue of Rs. 1.79 million per year. Following table shows the internal rates of return and payback period.

Description	Details
Net Present Value (NPV)	5,716,659.68
Benefits Cost Ratio (BCR)	1:1.7
Internal Rate of Return (IRR)	83%
Payback Period (years)	1.6

Space Requirement

One acre of land is required to produce herbs therefore land is taken on annual rental basis. In addition to that 2450sq.ft building of 4 rooms is also require for the washing, drying, processing, packaging and storage of herbs. In the herbs producing area the buildings are available and can be set up on a monthly rental basis. For this project it is assumed that the following lease/rentals rates will applicable for the packaging and marketing office.

Land Requirement

Area Required	Area	Monthly Rent Charges (Rs.)	Yearly Rent (Rs.)
For Production	**1 acre**	**-**	**10,000**
Management/ Processing Unit/Office	2450 sq. ft.	8,000	96,000
Total Rent		**8,000**	**106,000**

Machinery and Equipment

Following table provide the list of machinery and equipment required for the processing and packing of herbal products

Capital Investment	Amount(Rs)
Equipment's	546,250
Furniture	10,000
Cost of Production	55,000
Total Capital Cost	611,250
Variable Investment	956,838
Total Project Cost	1568,088

Operational & Maintenance Cost

Description	Unit	Price	Total (Rs./Year)
Repair & Maintenance of Machine	Yearly	3,750	3,750
Maintenance of Field	1Acre	41,088	41,088
Electricity Charges	Monthly	**1,000**	12,000

CROP MODELING: A TOOL FOR AGRICULTURE RESEARCH

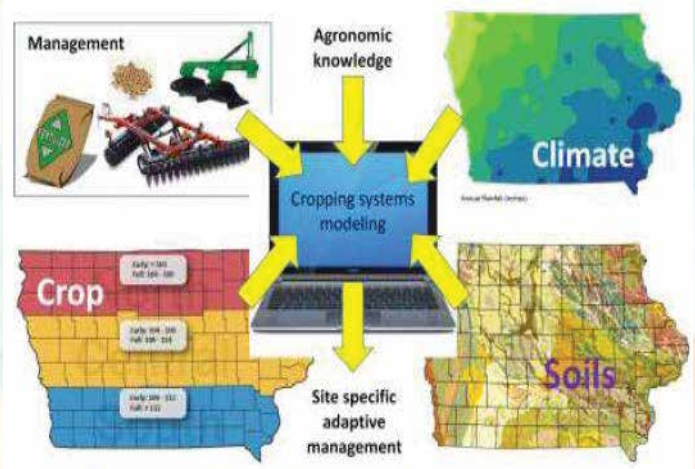


Figure 1. A cropping systems model uses agronomic principles to analyze information on soils, crop, climate, and management practices for every field and year separately.

Crop Modeling is an artistic tool for risk management in Agriculture. Crop models are being used as tool for sustaining food security in changing climate as they are used to develop innovative crop management system. Crop growth and development is described by crop models based on equations and there is in general information about these processes. For example, there might be information about the thermal time to flowering, which comes from controlled environment experiments, or information about maximum rate of root elongation from specific experiments on this aspect of crop growth. The main objective of crop models is to predict the timing, growth rate, partitioning of assimilates into economic yield, requirement of essential water and nitrogen resources.

Various models are being used in the whole world for yield forecasting in different climatic conditions. Similar scenario is in Pakistan but there is a need to test the scope and limitations of different crop models according to the area. Different models have been used for rice and wheat in Asia like Crop Environment Resource Synthesis (CERES) Rice and CERES wheat model to investigate a range of issues from management to yield gap analysis of wheat and rice in changing climate.

In Pakistan, there is a need to stabilize production of wheat in order to sustain food security, the main crop models used for wheat in our country are APSIM, DSSAT, SWAT, CROPWAT, Random Walk with Drift, Linear Trend, Simple Exponential Smoothing, ARIMA and IFSM. Agricultural Production Systems Simulator (APSIM) and DSSAT are also being used for yield forecasting of rice and wheat.

Traditional practices of agriculture must be replaced by new technologies. Crop modeling and simulation helps to like APSIM (is a software that allows dynamic simulation of crop production) enhance productivity of crops under limited resources, residue management, soil water and nutrient flow under different timing and methods of fertilizer application etc.

To achieve high productivity and meet the need of growing population, it would be required to increase the sowing density up to 15 % for rice and fertilizer use up to 15 % is considered as one of the adaptation strategy to make up the soil fertility status and high fertilizer requirement of new varieties. Research has showed that APSIM module predicted wheat crop yield through different parameters more accurately as compared to DSSAT. So it is more accurate and appropriate and can be used to simulate crop growth under changing climatic situations to select suitable genotype, sowing time, cropping pattern, fertilizers and weed management strategies that make crops capable to cope with environmental stress and hence increasing yield and to ensure food security.

Types of Models

The models are classified into different groups or types depending upon the purpose for which it is designed. A few of them are following:

1. **Empirical models:** These are direct descriptions of observed data which are generally expressed as regression equations (with one or a few factors) and are used to estimate the final yield. Examples of such models include those used for such experiments as the response of crop yield to fertilizer application, the relationship between leaf area and leaf size in a given plant species and the relationship between stalk height alone or coupled with stalk number and/or diameter and final yield.

2. **Mechanistic models**: A mechanistic model is one that describes the behaviour of the system in terms of lower level attributes (eg. Cell division). These models have the ability to mimic relevant physical, chemical or biological processes and to describe how and why a particular response occurs.
3. **Static and dynamic models**: A static model is one that does not contain time as a variable even if the end products of cropping systems are accumulated over time. In contrast dynamic models explicitly incorporate time as a variable and most dynamic models are first expressed as differential equations.
4. **Deterministic models**: A deterministic model is one that makes definite predictions for quantities (e.g. crop yield or rainfall) without any associated probability distribution, variance, or random element.
5. **Stochastic models:** When variation and uncertainty reaches a high level, it becomes advisable to develop a stochastic model that gives an expected mean value as well as the associated variance. However, stochastic models tend to be technically difficult to handle and can quickly become complex. Hence, it is advisable to attempt to solve the problem with a deterministic approach initially and to attempt the stochastic approach only if the results are not adequate and satisfactory.
6. **Simulation models:** These form a group of models that is designed for the purpose of imitating the behavior of a system. Since they are designed to mimic the system at short time intervals (daily time-step), the aspect of variability related to daily change in weather and soil conditions is integrated. The short simulation time-step demands that a large amount of input data (climate parameters, soil characteristics and crop parameters) be available for the model to run.
7. **Optimizing models**: These models have the specific objective of devising the best option in terms of management inputs for practical operation of the system. For deriving solutions, they use decision rules that are consistent with some optimizing algorithm.

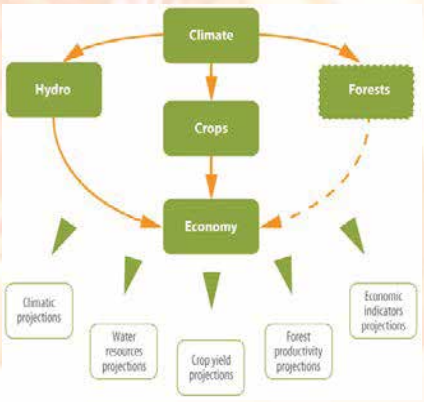
Crop Model Applications

Simulation modeling is increasingly being applied in research, teaching, farm & resource management, policy analysis and production forecasts. They can be applied, namely, research, crop system management, and policy analysis.

- **Research understanding**: Model development ensures the integration of research understanding acquired through discreet disciplinary research and allows the identification of the major factors that drive the system and can highlight areas where knowledge is insufficient. Thus, adopting a modeling approach could contribute towards more targeted and efficient research planning.
- **Integration of knowledge across disciplines**: Adoption of a modular framework allows for the integration of basic research that is carried out in different regions, countries and continents. This ensures a reduction of research costs (e.g., through a reduction in duplication of research) as well as the collaboration between researchers at an international level.
- **Site-specific experimentation:** Specific site selection can be using the model Crop models can be used to predict crop performance in regions where the crop has not been grown before or not grown under optimal conditions.
- **Improvement in experiment documentation and data organization**: Simulation model development, testing and application demands the use of a large amount of technical and observational data supplied in given units and in a particular order.
- **Yield analysis**: When a model with a sound physiological background is adopted, it is possible to extrapolate to other environments. Simulation models are used to climatically-determined yield in various crops. Through the modeling approach, quantification of yield reductions caused by non-climatic causes (e.g., delayed sowing, crop spacing, soil fertility, pests and diseases) becomes possible. Simulation models have also been reported as useful in separating yield gains into components due to changing weather trends, genetic improvements and improved technology.
- **Climate change projections:** The application of crop models to study the potential impact of climate change has been widely used across the continents. The increased concentration of carbon dioxide and other greenhouse gases are expected to increase the temperature of earth. Crop production is highly dependent on variation in weather and therefore any change in global climate will have major effects on crop yields and

productivity. Elevated temperature and carbon dioxide affects the biological processes like respiration, photosynthesis, plant growth, reproduction, water use etc. Proper understanding of the effects of climate change will therefore help scientists to guide farmers to make crop management decisions such as selection of crops, cultivars, sowing dates and irrigation scheduling to minimize the risks.

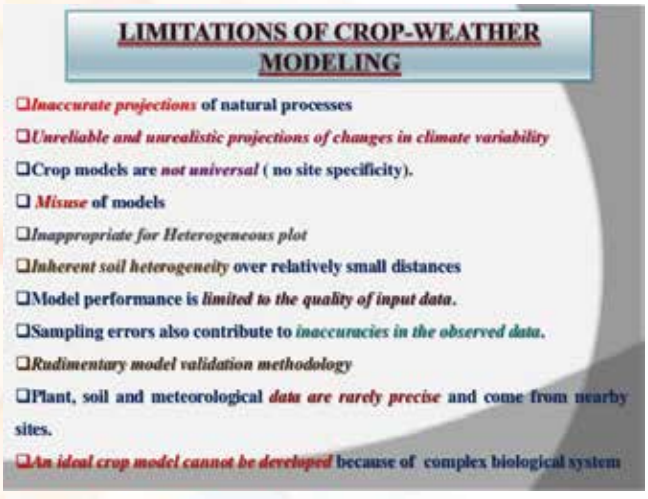
- **Scoping best management practices:** Simulation can be done to determine the best management practices under a certain cropping system. In the past, the main focus of agronomic research has been on crop production. Recently, in addition to profitable crop production, the quality of the environment has become an important issue that agricultural producers must address. Agricultural managers require strategies for optimizing the profitability of crop production while maintaining soil quality and minimizing environmental degradation. Solutions to this new challenge require consideration of how numerous components interact to effect plant growth. To achieve this goal, future agricultural research will require considerably more effort and resources than present research activity. Models having chemical leaching or erosion components can be used to determine the best farming practices over the long-term. Investment decisions like purchase of irrigation systems can be taken with an eye on long term usage of the equipment when irrigation schedules are done using the modeling approach.
- **Yield forecasting**: Reasonably precise estimates of crop yield over large areas before the actual harvest are of immense value to both the researcher and the farmer in terms of planning. In this approach the model is run using actual weather data during the cropping season for the geological region of interest. Weather years for typical years are used to continue simulations until harvest.



- **Breeding and introduction of a new crop variety**: Development and release of a variety is a complex process that may extend over a period of 5 – 15 years. Since the modeling systems approach integrates different components of agro ecosystems, it can be used to conduct multi-location field experiments to understand genotype by environment (G x E) interaction. Such studies can help in reducing the number of sites/seasons required for field evaluation and thus increase the efficiency of the process of variety development. A modeling approach can also provide estimates of yield probability in target environments based on the understanding of the G x E.

Limitation of Crop Modeling

- Crop models are not able to give accurate projections because of inadequate understanding of natural processes and computer power limitation. Moreover, most models are not able to provide reliable projections of changes in climate variability on local scale, or in frequency of exceptional events such as storms and droughts. General Circulatory Models (GCMs) have so far not been able to produce reliable projections of changes in climate variability, such as alterations in the frequencies of drought and storms, even though these could significantly affect crop yields.
- As different users possess varying degrees of expertise in the modeling field, misuse of models may occur.
- Since crop models are not universal, the user has to choose the most appropriate model according to his objectives.
- Biological and agricultural models are reflections of systems for which the behavior of some components is not fully understood and differences between model output and real systems cannot be fully accounted for.
- Model performance is limited to the quality of



input data. It is common in cropping systems to have large volumes of data relating to the above-ground crop growth and development, but data relating to root growth and soil characteristics are generally not as extensive. Most simulation models require that meteorological data be reliable and complete. Finally, sampling errors also contribute to inaccuracies in the observed data.

- An ultimate crop model would be one that physically and physiologically defines all relations between variables the model reproduces and universally real world behavior. However, such a model cannot be developed because the biological system is too complex and many processes involved in the system are not fully understood.

Source:

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پھلدار پودوں کی موسم گرما میں دیکھ بھال

مصنف: فہیم حیدر، آفیسر گریڈ- 1، زرعی ٹیکنالوجی ڈویژن

قدرت نے پاکستان کو ایسے موسم عطا کیے ہیں جن میں سارا سال پھل لگتے ہیں لیکن باغات کی کامیاب اور منافع بخش کاشت کے لیے مناسب اور بروقت تمام کاشتی امور کا خیال رکھنا ضروری ہے۔ زیادہ سرد اور گرم موسم میں پودوں کا خاص خیال رکھا جاتا ہے۔ یہ بات مشاہدہ میں آئی ہے کہ نسبتاً موافق موسمی حالات میں بھی اچھی دیکھ بھال سے پھلدار پودوں کی بہتر پیداوار حاصل کی جاسکتی ہے۔

مئی اور جون میں بہت زیادہ گرمی پڑتی ہے۔ اور بعض اوقات کئی علاقوں میں درجہ حرارت 50 ڈگری سینٹی گریڈ تک چلا جاتا ہے جبکہ پھلدار پودے 45 ڈگری سینٹی گریڈ تک معیاری پھل پیدا کرسکتے ہیں۔ مئی اور جون میں گرم ہوائیں بھی چلتیں ہیں جس کی وجہ سے چھوٹے اور بڑے پودوں کو نقصان پہنچے کا خدشہ ہوتا ہے پھل جھلس جاتا ہے، چھلکا پھٹ جاتا ہے، جبکہ کئی دفعہ پھل گر بھی جاتا ہے۔ اسطرح اسکی کوالٹی بہت بری طرح متاثر ہوتی ہے۔ باغبانوں اور کاشتکاروں کو پھلدار پودوں اور پھلوں کو موسم گرما کے مضر اثرات سے محفوظ رکھنے کے لیے درجہ ذیل احتیاطی تدابیر کو مد نظر رکھنا چاہیے:

* نئے لگائے گئے پودے مثلاً آم، کھجور، لیچی اور ترشاوہ پھل گرمی سے زیادہ متاثر ہوتے ہیں۔ ان پودوں کے لیے سائے کا مناسب بندوبست کرنا چاہیئے۔ اس مقصد کے لیے سرکنڈا یا پرالی سے ان پودوں پر سایہ کرنا چاہیئے۔

* نرسری سے جب بھی نئے پودے لائیں تو پیوند کی اونچائی کو مد نظر رکھیں۔ پیوند کی اونچائی زمین سے 12 سے 15 انچ اونچی ہو۔ اگر زیادہ اونچا ہو تو پودا براہ راست دھوپ اور گرمی کی زد میں آنے سے کمزور ہو جاتا ہے۔ اگر پیوند زیادہ نیچے ہو تو زمینی بیماریوں کا خطرہ ہوتا ہے۔ جراثیم اور کیڑے مکوڑے آسانی سے حملہ آور ہو سکتے ہیں۔

* پھلدار پودوں کی کانٹ چھانٹ کا بھی خاص خیال رکھنا چاہیئے سوکھی اور بیمار شاخیں کاٹ دینی چاہیے۔ کانٹ چھانٹ ایسی کریں کہ پودوں میں سے ہوا کا گزر ہو اور پھل پودے کی چھتری کے اندر والے حصے میں لگے۔

* آبپاشی کا خاص خیال رکھیں پھلدار پودوں کو 7 سے 10 دن کے وقفہ سے باقاعدہ آبپاشی کریں اور یہ وقفہ کسی صورت میں 10 دن سے زیادہ نہ ہو کھیلیوں کی باقاعدہ صفائی کی جائے تاکہ پانی کی رفتار کم نہ ہو اور آسانی سے میسر ہو سکے۔

* گرمی کی شدت کو کم کرنے کے لیے پھلدار پودوں کے تنوں کو نیلا تھوتھا اور چونے کے محلول سے سفیدی کی جائے اس کو بورڈو مکسچر یا پیسٹ کہتے ہیں اس سے تنے گرمی کے مضر اثرات مثلاً، چھال کے پھٹنے اور گوند نکلنے والی بیماریوں سے بھی محفوظ رہیں گے۔

* گرمیوں میں آبپاشی شام کے وقت کریں۔ وتر آنے کے بعد گوڈی کریں تاکہ زمین کی سطح بھربھری ہو جائے اور نمی بھی محفوظ ہو جائے۔

* مالٹا سنگترہ اور لیموں کا پھل سورج کی براہ راست شعاعوں سے بہت متاثر ہوتے ہیں جس سے پھل خراب، بڑھوتری میں کمی اور پھل کا چھلکا سوکھ کر سخت ہو جاتا ہے۔ اس مسئلے کو ختم یا کم کرنے کے لیے پودوں پر سادہ پانی کا سپرے کرنا چاہیئے۔

* باغات کے اطراف میں سفیدہ اور پاپولر وغیرہ کو ہوا توڑ باڑوں کے طور پر نہ لگائیں کیونکہ سفیدہ زمینی نمی کو بہت زیادہ کم کر دیتا ہے جامن آم اور بیر ہوا کو روکنے کے لیے استعمال کیے جاسکتے ہیں۔ زمین میں نمی چیک کرنے کے لیے ٹینشیو میٹر کا استعمال کریں۔ یہ میٹر درخت کے پھیلاؤ کے نیچے مختلف گہرائیوں یعنی 12 انچ، 24 انچ یا 36 انچ کی گہرائی میں لگائے جاتے ہیں۔ جب میٹر کا پیمانہ 40 تک پہنچ جائے تو باغبان آبپاشی میں لاپرواہی مت کریں۔

* اس موسم میں بار بار ہل مت چلائیں پودے کے نیچے ہلکی ہلکی گوڈی کر کے سطح زمین کو 4 سے 6 انچ گھاس کی موٹی تہ پودوں کے پھیلاؤ سے تقریباً ایک فٹ تک پھیلا دی جائے جس سے زمین کا درجہ حرارت کم اور پھل کے کیرے کی شدت میں کمی واقع ہو جاتی ہے۔

یہ تمام احتیاتی تدابیر اسی وقت فائدہ مند ثابت ہونگی جب پودوں کی غذائی ضروریات کو پورا کرنے کے علاوہ کیڑوں اور بیماریوں کے حملہ سے بچاؤ کا خاص خیال رکھا جائے۔

SUCCESS STORY OF Mr. NIAZ HUSSAIN BODANI

Mr. Niaz Hussain Bodani is a progressive farmer of cotton in Shahdadpur located in Sanghar district of Sindh province. Mr. Niaz Hussain finds solutions of his problems through his research, experiences and exchanges results of his bad or good experiences with other farmers of the area on basis of scientific lines. He developed his inherited land of 132 acres by his hard work and focus on success of his goal.

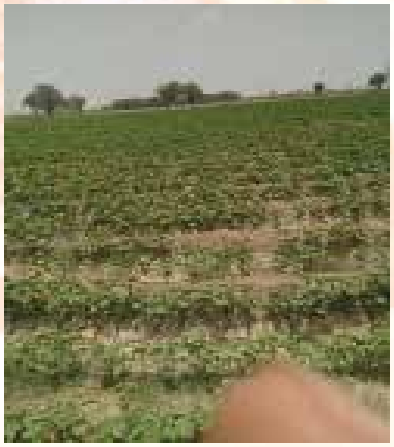
Temperature and Climate

Being a cotton grower he knows that cotton is a long day and warm season crop and seed germination takes place at 16°C and vegetative growth is satisfactory at 43° C. For vegetative growth, mean daily temperature 21-27°C is optimum. Day temperatures ranges from 27-32°C with cool nights favor fruiting & boll development. Optimum temperature ranges from 29-34°C for peak flowering. Under adequate soil moisture, cotton can withstand at high temperatures of 43-45°C for short periods.

Land Preparation and Soil

According to him tillage implements used for growing cotton depends on:

1. Nature of the soil
2. The method of growing the crop
3. The different operations of cultivation



He suggested that cotton can be grown on both rainfall and irrigated conditions with variety of soils like sandy loams to clay loams soils having high water holding capacity and pH of 7.0 to 8.0 considered as optimum. Cotton is sensitive to saline and water logged conditions. For good growth of cotton plants on deep black soils three things besides initial soil fertility are usually necessary.

a) The soil should be free from undesirable weeds.

b) The soil should possess adequate moisture in the surface layers for the first few weeks after sowing.

c) It should be provided with good surface drainage thereafter to prevent water – logging.

He applies two to three times tillage operations and makes ridges and furrows with the help of ridger or bund former. Growing cotton on ridges economizes the use of irrigation water and the furrows acts drainage channels whenever heavy rains are received. He told that deep cultivation in hot and dry tracts encourages loss of moisture as well as organic matter from soil. For hybrids/high yielding varieties of cotton, 2-3 deep ploughings by mould board plough or tractor drawn disc ploughs are necessary. Use of sub-soiler may be helpful in heavy black soils once in 2-3 years where soil pans are usually formed

Seed Variety Under Use

IR-901, DRBT-1000,602 CM, MS 370, AGLE 01, FH 9001, DS-15 & DS-18

Use of Cotton in Value addition

Cotton is a plant that is cultivated for a multipule purposes and products. Long cotton fibers are used to make thread, yarn, textiles, clothes and other products, like towels, carpets, sheets, and more. Clothes made of cotton are especially light and comfortable. The short fibers can be used in the paper industry. Cotton seeds have some important uses, too. Primarily, the seeds are used to produce cottonseed oil and margarine. The crushed remains of the seed can be used as a high-protein feed for cattle and other animals. After the cotton is picked, the stalks and leaves of the plants are plowed under to enrich the soil.

Cotton Harvesting

He suggested that cotton picking should start when dew has dried on cotton plants. Lower bolls should be picked first to reduce the contamination of cotton with leaves and dust.

زرعی سفارشات برائے کسان

ملک بھر میں جولائی کے مہینے میں مون سون کی بارشوں کا آغاز ہو جاتا ہے اور درجہ حرارت 35 سے 40 ڈگری سینٹی گریڈ کے درمیان رہتا ہے۔ تاہم ہوا میں نمی کا تناسب 50 سے 60 فیصد تک بڑھ جاتا ہے۔ جو کہ فصلات کی بڑھوتری پر اثر انداز ہوتا ہے۔ لہذا مون سون کے موسم میں فصلات میں پانی کے نکاس کو یقینی بنائیں اور فصلات میں آبپاشی محکمہ موسمیات کی پیشن گوئی کو مدنظر رکھ کر کریں۔

مکئی

☆ مکئی کی کاشت کے لیے بھاری میرا زرخیز زمین بہت موزوں ہے۔

☆ بارانی علاقوں میں مکئی مون سون شروع ہونے سے پہلے کاشت کریں تا کہ پودے جڑوں کا نظام اچھی طرح قائم کر لیں اور مون سون کی بارشوں کا صحیح فائدہ اٹھا سکیں۔

☆ محکمہ زراعت کی منظور شدہ عام اقسام ملکہ 2016، اگیتی 2002، ایم ایم آر آئی پی اور پرل جبکہ دوغلی اقسام ایف ایچ 1046، ایف ایچ 949 اور وائی ایچ 1898 کاشت کریں۔

☆ بارانی علاقوں میں مکئی کی کاشت سنگل رو کاٹن ڈرل/پلانٹر سے آڑھائی فٹ کے فاصلے پر کریں۔ قطاروں کا درمیانی فاصلہ دو سے اڑھائی فٹ رکھیں۔

☆ موسمی مکئی کی دوغلی اقسام کے لیے پودوں کی تعداد 29 ہزار سے 30 ہزار فی ایکڑ جبکہ عام اقسام کے لیے پودوں کی تعداد 25 سے 26 ہزار فی ایکڑ رکھیں۔

☆ آبپاش علاقہ جات کی درمیانی زمین میں بوائی کے وقت دو بوری ڈی اے پی اور ڈیڑھ بوری پوٹاشیم سلفیٹ فی ایکڑ ڈالیں جبکہ بارانی علاقوں میں ایک بوری ڈی اے پی + ایک بوری یوریا + آدھی بوری پوٹاشیم سلفیٹ فی ایکڑ بوقت کاشت ڈال دیں۔

مونگ اور ماش

☆ مونگ کی کاشت کے لیے بہتر نکاس والی ریتلی میرا زمین موزوں ہے۔ جبکہ کلر راٹھی اور سیم زدہ زمین غیر موزوں ہے۔

☆ بارانی علاقوں کے کاشتکار مونگ اور ماش کی کاشت مون سون کی پہلی بارش کے بعد وتر آنے پر کریں۔ ان دونوں فصلوں کی کاشت جولائی کے آخر تک کی جا سکتی ہے۔

☆ مطلوبہ پودوں کی تعداد حاصل کرنے کے لیے فی ایکڑ 8 سے 10 کلوگرام بیج کاشت بذریعہ چھٹہ اور ڈرل سے کاشت کے لیے 12 سے 15 کلوگرام بیج فی ایکڑ استعمال کریں۔ اور جب پودے 8 سے 10 دن کے ہوں جائیں تو چھدرائی مکمل کر کے زائد اور کمزور پودے نکال دیں۔

☆ آبپاش علاقوں میں منظور شدہ اقسام نیاب مونگ 2011، آزری مونگ 2006 اور چکوال ایم 6 کاشت کریں، جبکہ بارانی علاقوں میں نیاب مونگ 2011، آزری مونگ 2006، نیاب مونگ 2016 اور بہاولپور 2017 جبکہ ماش کی کاشت کے لیے ماش 97، چکوال ماش اور عروج 2011 موزوں ترین اقسام ہیں۔

☆ اچھی پیداوار کے لیے بوقت کاشت ایک بوری ڈی اے پی اور آدھی بوری پوٹاشیم سلفیٹ استعمال کریں۔

☆ قطاروں کا درمیانی فاصلہ 30 سینٹی میٹر جبکہ بیج کی گہرائی 3 سے 5 سینٹی میٹر رکھیں اور پودوں کا درمیانی فاصلہ 8 سے 10 سینٹی میٹر رکھیں۔

تل

☆ تل کی کاشت کے لیے پانی جذب کرنے والی درمیانی اور بھاری میرا زمین کا انتخاب کریں تاہم یہ ہر قسم کی زمین میں بھی کاشت کی جا سکتی ہے۔

☆ شرح بیج ڈرل یا قطاروں میں کاشت کے لیے ڈیڑھ سے دو کلوگرام بیج فی ایکڑ رکھیں۔

☆ پنجاب میں عام کاشت کے لیے سفید تلوں کی منظور شدہ اقسام ٹی ایچ-6 ٹی ایس 5 ہیں جو بہتر پیداوار کی صلاحیت رکھتی ہیں۔ جبکہ ان میں سے ٹی ایچ-6 مقابلتاً بہتر پیداوار کی حامل ہے۔

☆ اچھی پیداوار کے حصول کے لیے 15 جولائی تک کاشت مکمل کر لیں۔

Source: 1) Ziratnama Government of Punjab (Farmer's Advisory)
2) Fauji Fertilizer Company Limited (Farmer's Advisory Service)

MANAGEMENT TIPS

Transparency Decreases Animosity and Frustration

Brian Montes, Global Organizational Problem Solver, explained in his article "Using Transparency to Increase Your Team Engagement", about transparency that solves a lot of organizational problem, including animosity and frustration. He says that people and teams can't do their jobs to the fullest if they don't have the information necessary to function and make decisions. When organizations compartmentalize information out of fear, people and teams will get frustrated. Team members will start to question why the organization doesn't trust them enough to ensure they have the information needed to be successful at their jobs. Additionally, every time a team member has to stop what they are doing to ask for more information or track down someone with the information, productivity is lost. Without the proper information, people cannot make informed decisions or make a decision in a timely manner.

Connecting With Your Employees

Employees who feel valued and well-informed and are included in company activities and strategies are happier and perform best. That's according to a research. Happy employees who are more engaged will create positive results for customers and stakeholders. But how do we keep our people happy? According to Andrew Sullivan, Managing Director at SULLIVAN Consulting, Recruitment, Executive Search and Human Resources Specialist, to maintain healthy connections, it is essential for leaders to be effective communicators. Sullivan adds that great leaders make genuine connections by building trust and sharing information.

Hire People Who Fit Your Organizational Culture

The first step to creating a positive culture is to make sure you don't hire jerks, writes Alex Mazor, a dynamic leader, in his article "8 Steps to Creating a Positive Workplace Culture". It's for this reason that companies have such a rigorous hiring process. High performing employees who don't fit into your culture are known as vampires, Mazor adds. He stressed that these employees must be terminated because, while performance is solid, their attitude is detrimental to company culture, which is detrimental to business. One bad hire can affect an entire department and possibly dozens of customers. And it can happen quickly, acting like a virus that spreads. While this might seem obvious, many companies still fail here, he adds.

Source: Alex Mazor, Dynamic leader with years of organizational development, training, sales, marketing and multi-unit management experience.

Be Approachable as a Leader

In today's business environment, leaders are so busy so much so that they don't have time anymore to lend their ears to their employees. But that should not be the case says Amir Ghannad, author of the Transformative Leader and Founder of the Ghannad Group. Remember, just by virtue of you being a leader your employees look up to you, and one small gesture of acknowledgement goes a long way. As a leader, you should look up, make eye contact and greet people, Ghannad adds.

NATIONAL NEWS

Initiation of Warehouse Receipt Program to Store Farmers' Product in Punjab

A program of Warehouse Receipt Financing has been started by Punjab Government to store the produce of farmers on public private partnership basis. Under this initiative farmers can avail the facility of storage of their harvested product in these houses on long term basis. Farmers can save their crops from natural calamities, attack of insects and pests for long time with the help of latest installed agriculture technology in these houses. This program would also save farmers from unnecessary cuttings of market on their produce.

A credit facility is also being provided to farmers against their produce and future needs under this program. Farmers can get loan up to 70 percent on basis of running rates of crops after completion of necessary formalities of nominated Banks' branches. In order to avail loan farmers are required to open an account in selected branch and a receipt of his product received from warehouse administration released by them on the basis of farmer's product quality and quantity. Loans are available at Muslim Commercial Bank (MCB), Islamabad Field mils, Warehouse facility of Okara JO and Pakistan Agriculture Coalition Agility.

Source: Punjab Agriculture Department, Gov. of Pakistan

KfW Development Bank, PPAF Inaugurated Solar Grid Projects in Swabi, Karak

KfW Development Bank, Germany and Pakistan Poverty Alleviation Fund (PPAF) inaugurated state of art Solar Energy Mini-Grids Projects completed recently in district Swabi and district Karak, Khyber Pakhtunkhwa respectively. PPAF is implementing hydropower & renewable energy (HRE) projects in Khyber Pakhtunkhwa with the financial support of the Government of Germany through the German Development Bank (KfW). The mini-grid solar systems, implemented in small villages of districts Swabi and Karak, have a total capacity of 196kW and 185kW and jointly provide electricity from indigenous and clean energy resource to about 434 households within these districts. It is pertinent to mention here that 24 Solar mini-grid systems with total capacity of 119 kW in off-grid villages of Lakki Marwat have already been completed.

Source: https://www.pakissan.com/2018/07/18/kfw-development-bank-ppaf-inaugurate-solar-grid-projects-in-swabi-karak/

A Seminar on "The Role of Local Government in Tackling Climate Change Challenges" Arranged by SDPI

A discussion seminar titled as "The Role of local Governments in Tackling Climate Change Challenges Organized by Sustainable Development Policy Institute (SDPI) to mark the World Environment Day on (Tuesday June 05, 2018). Ms. Romaina Khursheed Alam, Former Parliamentary Secretary for Climate Change. Dr. Mehmood A. Khwaja, Senior Advisor Chemicals & Sustainable Industrial Development, Mr. Irfan Tariq DG Environment, Ministry of Climate Change and Zeeshan Naqvi Deputy Mayor Islamabad attended the event along with others attendees. Two officers Mr. Fakhar Imam, OG-II and Mr. Ahmed Hussain Khan, OG-III represented ZTBL in this seminar.

Ms. Romaina Khursheed Alam Former Parliamentary Secretary for Climate Change suggested that it is about time to bring the environment into the main political agenda and all political parties must come in a table to tackle the problems of climate change. Dr. Mehmood a Khawaja Senior Advisor Chemicals & Sustainable Industrial Development, SDPI also suggested for establishment of Stakeholders Advisory Committees (SACs) at the local level with the motive to create awareness among people about climate change. Mr. Irfan Tariq said that the local government should be empowered enough to take small steps, which can be managed and frequently scaled up.

In open round discussion Mr. Ahmed Hussain Khan elaborated the Issues related to Plastic degradation and how degradation is influencing climate change. Furthermore Mr. Muhammad Fakhar Imam suggested that we have to study the climate changes at regular interval and following research we need to keep adopting and adapting the mitigation strategies especially in terms of Climate Change and its impacts on Pakistan's Agriculture.

ZTBL NEWS

MoU Signed Between ZTBL and Converde Asia (CA) Pvt. Limited

A memorandum of Understanding was signed between Zarai Taraqiati Bank Limited and Converde Asia (Pvt.) limited (CA) regarding mutual cooperation to work and contribute together in the agriculture sector with prime focus on the Pilot Project on the priority area of Nursery Plantation Sector of Pakistan with special focus on high yield oriented plants.

The purpose of this MOU is to provide a general framework to facilitate collaboration and cooperation between the Parties (CA & ZTBL) in respect of their common interest to extend and promote development and progress of the Pilot Project on priority areas of Nursery Plantation as well as any other project mutually agreed in future. The CA and ZTBL commit themselves to enhance collaboration mechanisms in order to strengthen private sector and support inclusive agricultural and economic development especially in perspective of achieving the Sustainable Development Goals of United Nations.

ATM Machine has been Installed in ZTBL

ZTBL on 27th June 2018 achieved a milestone by installation of its first ATM at Head Office building Islamabad, making operational its own ATM network. ZTBL President Syed Talat Mahmood & other senior management of the Bank executed test transaction withdrawing cash from their own accounts. ZTBL is on its way to establish the most advanced network of ATM established to date in the country. ZTBL has chosen BPC as its middleware and switching software, introducing this software first time in Pakistan. BPC is an advanced software capable of features unavailable in Pakistan to date.

ZTBL debit card will be EMV enabled co-branded on its launch with PayPak, one of the first few banks to comply with SBP recommendation.

ZTBL ATM will be enabled to execute cardless transaction based on biometric validation. ZTBL ATM will be first to launch video call based ATMs in the country. This would be particularly helpful in facilitating its rural, less educated customer base. By the end of 2019 ZTBL plans to have ATMs all over the country mainly covering rural areas, targeting un banked section of the economy.

ZTBL Obtained AAA/A-1+ (Triple "A"/A-1 Plus) Fifth Time Consecutively

It is pride for ZTBL to obtain AAA/A-1+ (Triple "A"/A-1 Plus) with stable outlook rating consecutively for the fifth year. This rating was reaffirmed by the JCR-VIS Credit Rating Company. This recognition of Bank's credit worthiness and STABLE future outlook exhibits Bank's commitment to service its financial obligations and confidence posed upon by the stakeholders & valued customers of the Bank.

ZTBL is vigorously pursuing to adopt contemporary banking practices and generate financial resources in order to serve small farmers of the country. Since year 2014, ZTBL has substationaly enhanced the deposit base and enhanced its agriculture loan portfolio, while meeting the financing needs of over 400,000 small farmers of the country.

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