



Agri-Business Supplement

Zarai Taraqati Bank Limited.

FISH FARMING THROUGH AQUA CAGE CULTURE

Introduction



Cage aquaculture has grown rapidly in recent decades and is currently undergoing swift changes in response to pressures from globalization and an escalating worldwide global demand for aquatic products. There has been a move towards clustering existing cages as well as towards the development and use of more intensive cage-farming systems. In particular, the need for suitable sites has resulted in cage aquaculture accessing and expanding into new untapped open-water culture areas such as lakes, reservoirs, rivers and coastal brackish and marine offshore waters.

The ever-increasing competition for land and water space, along with the growing market demand for marine fish and other sea products, as mentioned above, are some of the elements that are motivating the aquaculture engineering industry and entrepreneurs in the development of farming structures in open waters. In the past couple of decades, a variety of fish containment structures, typically referred to as fish cages, have been designed, tested and commercially produced. These structures vary in design, size and materials used as they are intended for diverse environments, ranging from relatively protected to highly exposed and dynamic sites, either as floating or submerged underwater structures and adopting a number of technological solutions to facilitate fish stock husbandry and management.

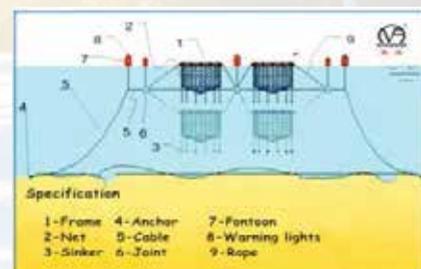
High-Density Polyethylene (HDPE) Floating Cages

High-Density Polyethylene (HDPE) floating cages, as they are currently widely used in modern industrial marine aquaculture in many parts of the world owing

to the versatility of the materials used the simplicity in the various farming operations and the relatively contained investment capital required. The main structural elements of these cages are the HDPE pipes, which can be assembled in various ways in order to produce collars of different sizes and shapes. The HDPE pipes, held together by a series of brackets with stanchions disposed throughout the entire circumference, form the floating collar ring, which is the main structure on which the fish net pen is secured. These gravity cages maintain the net penshape and volume through a system of weights, also known as a sinker system, fixed at the bottom end of the net.

Cage Culture: Harvesting and Economics

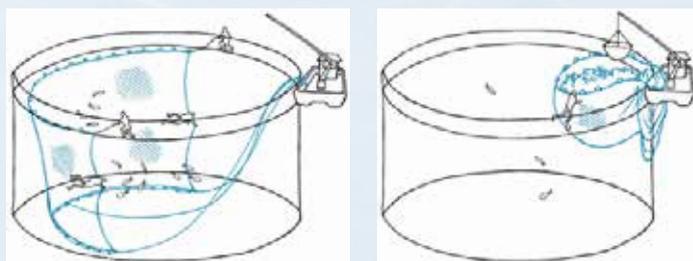
Being successful at raising fish in cages is not enough. Harvesting, keeping records, marketing, and looking at the economics of the venture are also



essentials for successful cage culture. This is particularly true if the goal is to increase farm income.

Harvesting

Harvesting cages is simply a matter of removing the fish from the cage with a dip net. This is one of the major advantages of cages and usually the reason people picked cage culture in the first place.



Harvesting can begin whenever the fish reach market size. The market size depends on the species being raised and the market that has been identified. Time for fish to reach market size usually depends on the size of the fingerlings stocked and the overall conditions during the growing season. In the case of warm water, fish, harvest usually begins in September or October in the south-eastern region. Trout and

other coldwater species are usually harvested in March and April.

Tilapia must be harvested before the water temperature drops much below 60° F in the fall. Trout must be harvested before the water temperature rises above 70° F in the spring. Most other warm water species can be left in cages during the winter months and harvested at any time. This may help in planning markets. Fish do not grow at the same rate, some reach maturity early may be removed. However, it should be cautioned that reducing the stocking density by partial harvest, before the water temperature drops to around 60° F, may induce stress and increase fighting among the remaining fish due to the lower density. Fighting may also occur if fish in the cage get too large. Increased fighting may lead to injuries and related bacterial diseases. Before harvesting it is important to sample the fish for possible off flavor. Off-flavor is caused by more than one agent. Off-flavor is most common in the warmer months but can occur at any time of the year. If the fish taste muddy, musty, oily, or have any strange flavor, you should wait and harvest them at a later date.

Off-flavor will go away within given time (usually about two weeks) and good water quality. Your marketing efforts will be harmed if you sell off-flavor fish. Stop feeding 2 days before harvest. This gives the fish time to empty their digestive systems and reduces holding and processing problems. At harvest record the number of fish harvested and their weight (length records could also be useful). These records will be necessary to analyze the success of your venture.

Marketing of Fish

Ideally, identify your market before you stock, but always plan your marketing before you harvest. Having no marketing plan will mean



frustration and reduce your chances of a profitable venture. Most fish can be sold either live or dressed (processed). If you plan to process your fish you must be in compliance with state health laws. Contact your state Department of Health or the fisheries (or aquaculture) specialist with the Extension Service for information on processing regulations. Several possible markets exist for your fish. Which markets

are best for you may depend on the number or volume of fish you have to sell, your ability to transport the fish, your ability to process the fish, and your proximity to known markets. Possible markets include:

- Live sales direct to consumers
- Direct sales to consumers of processed fish
- Live sales to fee-fishing lakes or live-haulers
- Sales to local processing plants
- Sales to local restaurants or grocery stores

Small producers, with only a few hundred fish to sell will probably find their greatest profit in selling directly to the consumer. Direct sales of live or dressed fish reduce middleman costs and bring all the profit back to the fish farmer. Live sales at the pond bank or at local farmers' markets also eliminate the need to process the fish. Live sales markets may take a while to develop, but are exceptionally profitable.

Fee-fishing, fish-out, or pay lakes are good markets for live fish. Fish-out lakes usually buy fish to stock on a regular basis through the spring and summer and pay premium prices.

However, harvesting of your fish in the fall is a problem, in that fish-out lakes may not want to stock close to the winter months. Also, it may be necessary to haul the fish to these fish-out lakes. If you do not have the ability to haul your own fish you may want to contract with a live-hauler. The live-hauler may buy the fish directly from you or he may want a percentage of the sale price.

Finally, if your volume is great enough you may decide to start a processing operation or if you are close to existing processing plants you may wish to sell to them. This latter option is probably the least profitable but is also the most convenient and least time consuming.

Whenever marketing, farm-raised fish stress quality and freshness. In the case of cage-raised fish emphasize that they have been completely away from the mud that they were grain fed, and that they were grown in a pollution-free environment. Many producers believe that cage-raised fish are better tasting than those raised loose in ponds.

Advantages and Disadvantages of Cage

Advantages

- Flexibility of management

- Ease and low cost of harvesting
- Close observation of fish feeding response and health
- Ease and economical treatment of parasites and diseases
- Relatively low capital investment compared to ponds and raceways

Disadvantages

- Risk of loss from poaching or damage to cages from predators or storms
- Less tolerance of fish to poor water quality
- Dependence on nutritionally-complete diets
- Levelling turned over – This may occur when anaerobic material flows up from the bottom of the lake, increasing toxic chemicals and loss of oxygen in the water.
- The cage has three main parts. The outer part which floats on the water surface is made from 2-3 HDPE tubes. The diameter of the tubes is 250mm and they compose the upper floating base (as seen in the pictures) to which the fish growing net is tied.
- The second component is the net, where the fish are kept and grown. The net is completely submerged under water in a depth as determined by the farm's requirements.
- The third component is the mooring system located at the bottom of the lake which anchors the cage system to the designated location above water surface. The mooring system is anchored to the bottom with heavy anchors. Out of this anchoring system there are a number of cables protrude which connect to the cages and thus anchor the cage so that it cannot move. This system is designed to withstand strong winds and large waves. A number of mooring systems will be placed in several locations in the lake. Each of the systems will carry 24 cages. Each system will be named so it will be characterized and identified by the farm's computer.

Source: <http://www.farmingpakistan.com/fish-cage-culture.html>

SEED PRODUCTION TECHNOLOGY OF RADISH (*Raphanus sativus*)

Radish (*Raphanus sativus*) belonging to the family Brassicaceae is one of the common root crops widely cultivated all over Pakistan. The seed production can be done during September – October in autumn and



during March in spring season. Seed production can also be taken up during summer season.

Method of Seed Production

Radish is a highly cross-pollinated crop and self-pollination occurs to the extent of 0 - 5%. Cross-pollination mainly occurs through bees and other flies. Seeds should be allowed to set by cross-pollination in isolation. Seed production is done by seed to seed or root to seed method. In seed to seed method, the matured roots are left to produce flowers and seeds in the place where seeds are sown initially. It is used for certified seed production alone. In root to seed method, roots at edible maturity should be uprooted and the roots of true to varietal characteristics should be selected and transplanted to the well prepared field after proper trimming of roots and shoots. Breeder seeds and foundation seeds are produced by this method.

The isolation distance maintained between the fields of other varieties and the fields of the same not conforming to the varietal purity requirements for certification is 1600 metres for foundation and 1000 metres for certified seed production.

Seed Production Stages

Breeder seed → Foundation seed → Certified seed

Land Selection

The land selected should not be cultivated with same crop for the past two seasons. If cultivated it should be inspected by the certification agency and found not to contain any soil borne diseases. The land should be fertile with good drainage facility.

Seed Selection and Treatment

Certified seeds should be obtained from an authorised source. Seeds should be healthy and free from disease and pest infection. Remove the broken, coloured seeds and use uniformly graded seeds. Seed rate is 400 gms/acre (10 kg/ha). The selected seeds should be soaked in warm water for 30 minutes before sowing.

This helps in the softening of the seeds. This will inhibit the seed borne diseases. Treat the seeds with *Trichoderma viride* @ 4 gms/kg of seeds.

The treated seeds are sown directly in the field ploughed for 3 – 4 times and formed into ridges. Well prepared soil of soft and smooth texture will enhance the germination and growth of the plant. Seeds are sown in ridges about 60 – 70 seeds per metre of row at 1.5 – 2.5 cm depth.

After thinning the intra row spacing should be 5 – 10 cm. In rep lanting method, the mother roots are pulled out carefully without damage to the roots and selected based on the typical characteristics. Before replanting the shoot and the root parts are trimmed to 2/3 and 1/2 to 3/4, respectively. The roots (also known as stecklings – roots used for replanting for seed production) are planted at a required spacing of 45 x 45 cm.

Nutrient Management

Farm yard manure or compost is applied @ 10 tonnes/acre (25 tonnes/ha) before last ploughing and incorporated into the soil. Neem cake @ 30 kg/acre (75 kg/ha) and vermicompost @ 250 kg/acre (600 kg/ha) should be applied as basal manure. Enriched vermicompost (2 kg *Azospirillum*, 2 kg *Phosphobacterium* and 2 litres *Panchagavya* mixed with 250 kg vermicompost and kept covered for a week and then used) @ 250 kg/acre (600 kg/ha) should be applied 20 – 25 days after sowing as first top dressing.

Second top dressing should be done 40 – 45 days after sowing using neem cake 15 kg and vermicompost 250 kg mixed with 200 gms of asafetida per acre (35 kg neem cake + 600 kg

vermicompost mixed with 500 gms of asafetida per hectare). During flower initiation stage 10% tender coconut solution (1 litre tender coconut water + 9 litres of water) should be sprayed.

Weed Management

Weeding at regular intervals is very important for the seed crop. The first weeding can be done 15 – 20 days after seed sowing / replanting. Periodical removal of objectionable weeds should be done.

Irrigation

Regular irrigation is a must for optimum yield. First irrigation is done at the time of sowing / replanting. Subsequent irrigation should be done at an interval of 10 - 15 days. Irrigation should be stopped when lower

few pods start drying. Irrigation should be done 3- 4 days before uprooting.

Pest and Disease Management

Radish commonly affected by pest and diseases like aphids, radish mosaic virus and Alternaria blight.

Roguing

Roguing should be done in all growth stages like vegetative stage, flowering stage, stock formation stage and pod formation stage. All the off-types, diseased plants, plants with thin roots, plants coming to early flowering etc., should be rogued off. The maximum percentage of off types and roots not confirming to the varietal characteristics permitted at the final inspection is 0.10% for foundation seed production and 0.20% for certified seed production. The maximum percentage of plants with seed borne diseases permitted at final inspection is 0.10% for foundation seed production and 0.50% for certified seed production.

Field Inspection

In radish a minimum of three field inspections should be done during the mother root production stage and seed production stage. In mother root production stage, two inspections should be done. The first inspection at 20 – 30 days after sowing to check isolation, off-types and other factors and the second inspection at uprooting of roots to determine the true characteristics of the roots. In seed production stage an inspection is scheduled during the flowering stage to check isolation, off-types, designated diseases and other relevant factors.

Harvesting

Harvesting is done once the pods are physiologically mature. The physiologically mature pods are in pearl brown colour. The matured pods should be harvested by hand picking and hung in an open space for further drying.

Seed Extraction and Processing

The dried pods are crushed to separate the seeds, since the pods do not shatter. The separated seeds should be cleaned using gauged screens.

Drying and Storage

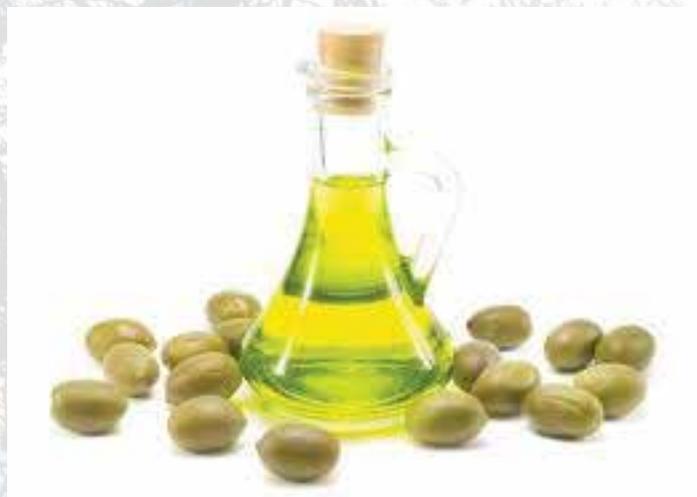
The extracted seeds should be dried under the shade for a week or two to attain a moisture level of 6% before storage. Seeds can be stored in cloth bags or 700 gauge polythene bags. Under suitable storage conditions the seeds can be stored for about four years.

Seed Standards

The percentage of minimum physical purity of foundation and certified seeds should be 98% with a minimum of 70% of germination capacity and 6% of moisture content. The presence of inert matter should not exceed 2.0%.

Source: <http://www.ciks.org/4.%20Seed%20Production%20Techniques%20for%20Vegetables.pdf>

CONSTRAINTS AND POTENTIAL OF EDIBLE OIL PRODUCTION IN PAKISTAN



Oil being an everyday commodity is used both as edible and as non-edible purposes. Similarly, vegetable oil is utilized by food and chemical industries for the production of a number of goods. Moreover, oilseed crop is more environment-friendly because they act as phytoremediators, which help remove heavy metals like cadmium, lead, trichloroethylene (most common groundwater pollutant), carbon tetrachloride (suspected human carcinogens) from the soil. Their plantation in cultivated lands for one time in a year makes those lands free from heavy metals and become a source of healthy and heavy metals free food.

However, as developed countries are moving from non-renewable to renewable energy resources, the usage of oilseed crops in biofuel manufacturing could prove a great landmark in coming decades. A country like Pakistan could greatly benefit from it because the country's socio-economic development is deteriorating owing to the shortage of energy resources along with the fact that biofuel produced from oilseed crops causes less environmental pollution. Thus, less global warming than the fossil fuels. Hence, cultivation of oilseed crops can make Pakistan both Healthy and Wealthy.

Pakistan has been constantly and chronically deficient in its production and it is very difficult to meet the

edible oil requirement of ever increasing population of Pakistan. About 70% of the domestic requirements are met through imports and its import increased at the rate of 12.5% annually which is huge threat to our economy. However, efforts have been made to increase its local production. Currently, 0.754 million ha of the total cropped area are under oilseed crops.

Current Situation

The major oilseed crops grown in the country include Sunflower, Canola, Rapeseed/Mustard and Cotton. Local production of edible oil during 2015-16 is estimated at 0.462 million tonnes. Total availability of edible oil from all sources is estimated at 2.667 million tonnes during 2015-16. The area and production of oilseed crops during 2015-16 is 8.474 million acres and 3.276 million tons. During 2015-16, 2.205 million tonnes edible oil of value Rs.136.920 billion (US\$ 1.392 billion) was imported. This alarmingly big gap between local production and import in spite of the fact that Pakistan is an agrarian country and should be self-efficient in fulfilling its local needs.



If we compare above figures from last year i.e. 2014-15 we recognize that the total availability of edible oil was 3.523 million tonnes. Local production of edible oil contributed 0.556 million tonnes while import of edible oil/oilseeds was 2.967 million tonnes. The edible oil import bill during 2014-15 was Rs.269.412 billion (US\$ 2.663 billion).

World oilseed market has been showing downward trend since last few years which has also affected local market of oilseeds/edible oil. Local market is likely to prevail around Rs. 2,000 per 40 kg for canola crop produce during 2015-16. Last year canola produce was procured at Rs 2,020 to Rs.2, 100 per 40 kg. Low prices in the market discouraged the oilseeds growers and resulted decrease in area under sunflower and canola crops during 2015-16.

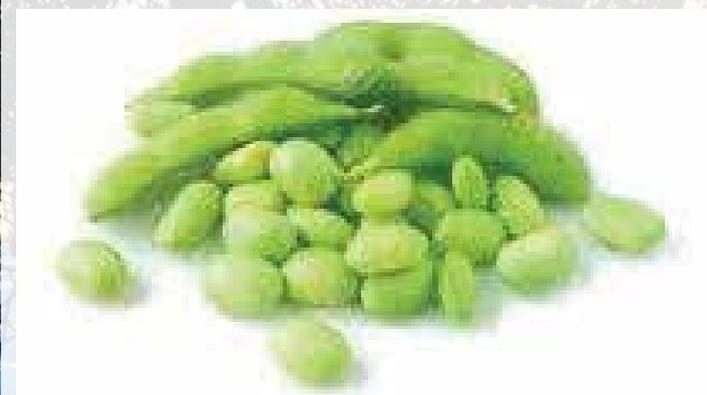
Reason of Gaps

A big reason for low local production is that the real yield potential of traditional crops like sunflower, rapeseed-mustard, groundnut, sesame and linseed has

not been achieved yet due to their cultivation on marginal lands, use of low quality seeds, use of insufficient amount of fertilizers by small landholders, competition with other winter crops like lentil, chickpea, wheat and other forages, less Research and Development Projects for high yielding crops and improper marketing system. The major and chief reason behind the low production is that farmer prefers to grow staple crops because there exist no procurement system for oilseed crops. These problems also become a hurdle in the cultivation of non-traditional crops like Jatropha, castor, coconut, olive and oil palm. However, solutions do exist also.

Constraints of Soybean Production

Some constraints in Soybean production are:



- Soil health issues
- Agronomic constraints
- Biotic constraints
- A-biotic stresses
- Drought
- Non-availability of the quality seeds
- Low consumer preference
- Diseases, insects, weeds
- High temperature
- Value addition of soybean
- Lack of high yielding varieties
- Social constraints

In soil constraints, health of soil in terms of fertility and soil erosion limits soybean yield. While in agronomic constraints improper planting time, planting depth, irrigation, fertilization, diseases, insects, and pests are included. Soybean doesn't require too much irrigation for whole growing period. Heavy rains effect germination of soybean much.

Researchers have found that insects, diseases and pests community increase day by day and lead to overall reduction in yield by destroying the

photosynthetic machinery of crop. In rainy season, diseases spread at much faster rate.

The major problems for soybean crop include seed borne disease (purple seed stain) is the most important seed disease that leads towards complete crop failure especially under rainy weather. Parasitic microorganisms like bacteria, fungi, oomycetes and viruses contribute to loss in economic yield. A similar trend occurs for pests; such as aphids, beetles, mites, and stinkbugs, cause considerable economic damage to the soybean crop. Aphids, rusts and nematodes also reduce soybean yield.

Another constraint is the non-availability of good seed in the market. Farmers also prefer cheap seed which is non-uniform and is genetically unable to perform well in field conditions. Annual temperature is increasing due to worldwide climatic changes and insect pest population paradigm may change. This dynamic may be resulting in sudden pest outbreaks such as pod sucking bugs population jumps suddenly when there is favorable climate.

Some farmers don't know where to sell soybean grains. Some growers don't know the process of soybean for domestic purpose. This is the need of the hour to establish markets for soybean crop especially in KPK where there is huge potential for this crop.

Some Possible Solutions for Soybean Production Constraints

- Loose well-drained soil is ideal for optimum soybean growth.
- The best phenotype is tall and bushy, quick growth, drought tolerant/
- Seed treatments aren't valued, but are as important for double crop as full season
- Availability of proper certified seeds / varieties
- Optimum seed rate and fertilization/ mulches should be preferred.
- Proper planting time and method leading to high yield in soybean.
- The best row spacing is 15" planted or 7.5" drilled
- Great attention against weeds, diseases and pests.
- Poor residue management and soil condition lead to poor seed-to-soil contact
- Producing double seed soybean crop
- Growers do not fertilize and let the beans scavenge after wheat (Zero tillage)
- Encourage Research and development

- Encourage the extension services for soybean production technology
- Harvesting at proper time (at full maturity)
- Strengthen the marketing system

Solution to the problem of less area for cultivation can be achieved easily because their cultivation requires less water, so can be cultivated in less irrigated areas. There is no need to cultivate them on those areas on which cereal crops and other major crops are grown because cultivation of oilseed crops on these lands may cause food insecurity and deprive the farmers from their livelihood as most of them rely on these crops. Less irrigated and less cultivated areas giving their potential yield are Coastal areas, Barani areas, Rod-kohi areas and dobari areas of Punjab and Sindh.

Coastal areas have a great potential to grow Oil Palm and Coconuts. The Olive plant can grow best in Balochistan and Northern areas. Barani areas have the potential to grow rapeseed-mustards, sunflower, safflower, groundnut and sesame. Safflower can successfully be grown in Dobari areas of Sindh and Balochistan. Barani areas are best for cultivation because water requirement can be fulfilled through monsoon rains. Sunflower which is emerging as a major crop because of its short period and successful growth and can be cultivated both in irrigated and barani areas. Jatropha, a major crop for biodiesel production can be grown easily in many areas of Sindh.

In summation, vast incentives should be given to make policies for initiating Research & Development projects to develop more oil producing and water-efficient varieties, establishing procurement mechanisms and rationalizing import of oils for encouraging farmers for increased cultivation of oilseed crops should be made.

Source:

- i) <http://www.voiceofjournalists.com>
- ii) *Pakistan Economic Survey, 2015-16*
- ii) <http://technologytimes.pk/>

PRE AND POST HARVEST ISSUES OF MAIN FRUIT AND VEGETABLES IN PAKISTAN

Fresh fruits and vegetables are highly perishable commodities that can easily spoil and deteriorate during produce handling along the supply chain from the producer to the final retailer. All fruits and vegetables are living parts of plants containing 65 to 95 per cent water. They continue their life metabolisms after harvest and thus change their



characteristics depending on product handling, storage and treatment, all of which have a decisive impact on the life of the product. Pakistan is blessed with favorable climatic conditions for a variety of fruits and vegetables production. Pakistan produces annually 13.67 M.T fruits and vegetables with a share of 6.65 million ton fruits and 7.02 million ton of vegetables (GOP, 2010). Out of these produce 25-30% is wasted each year.

Pre Harvest Issue

- Varieties with low shelf life
- Shortage of water
- Lack of on-farm infrastructure
- Biotic stresses
- Imbalance use of nutrients
- Un-skilled labor
- Insect pest and disease infestation
- Lack of appropriate tools for harvesting
- -non-application of pre-harvest recommended treatments/practices,
- Harvesting at improper stage

Post- Harvest Issue

- Non-removal of field heat
- Dumping produce
- Moisture condensation causing pathogen infestation
- Packaging in bulk without sorting and grading of produce
- Improper transportation and storage
- Lack of new technology for storage
- low atmospheric humidity
- Physical injuries

Potential Post Harvest Losses in Citrus

In a developing country like Pakistan, post-harvest losses of citrus fruits are in the range of 23-38% as against 5-10% in developed citrus growing countries like Brazil, USA, Australia, Spain, Italy and Israel. Primary factors of post-harvest losses in citrus are

- (1) Mechanical,

- (2) Physiological,
- (3) Pathological or environmental.

Mechanical Loss: is caused by careless handling during harvesting, packing, transportation, storage etc. Some insects and birds are also responsible for the mechanical injury.

Environmental Factors: temperature, humidity, composition and proportion of gases in controlled atmospheric storage also play an important role. High temperature and relative humidity favors the growth of micro-organisms which cause extensive damage to the produce. In-adequate harvesting facilities and rough handling results in



bruising and increase possibilities of contact of the produce with the soil which leads to contamination with organisms and rotting done in fruits. Inadequate storage facilities at the producing or marketing centers leaves the produce to the natural causes of losses i.e. Decay by organisms, respiration, transpiration and other biochemical reactions. Transportation and distribution are the important areas of post-harvest loss.

Physical and Mechanical: injuries occur during transportation and distribution. Longer shipment and distribution period eventually cause heavy losses.

Potential Post Harvest Losses in Mango

- (1) Mechanical Damage (Bruising, skin injury)
- (2) Low Temperature (Chilling injury)
- (3) Pathological Factors (insect pest)

Issues of SPS Compliances

No work has been undertaken to study the impact of Sanitary and Phytosanitary agreement of WTO on export of agricultural products from Pakistan. Few studies have however addressed the issue of SPS measures and developing country exports directly, although in most cases the related cost of compliance and impact of trade flows is not quantified. SPS measures are claimed to be an impediment to exports of, for example: fish, spices, livestock products and horticultural Products. More theoretical work has demonstrated that developing countries find it

difficult to trade with developed countries due to differences in quality equipments, which in turn reflect prevailing consumer demand or the nature of government regulation (Murphy & Shleifer, 1997). It is evident that Pakistan is constrained in its ability to export agricultural and food products to developed countries under SPS requirements. Indeed, Pakistan considers SPS requirements to be one of the greatest impediments to trade in agricultural and food products, to the developed countries. This reflects the fact that developed countries typically apply stricter SPS measures than developing countries and that SPS controls in Pakistan are weak and overly fragmented. Furthermore, in certain circumstances SPS requirements are incompatible with prevailing systems of production and marketing in Pakistan. As such, large-scale structural and organizational changes are required to comply with SPS requirements.

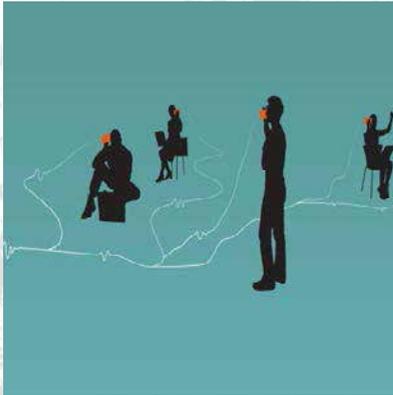
Status of SPS Management In Pakistan

- Pakistan lacks coherent strategy for SPS Management in relation to its trade.
- Non-compliance with food safety/quality standards in export trade.
- Imposition of ban(s) on exports due to non-compliance of SPS Standards.
- Lack of SPS Management capacity in Agricultural Line Departments/Labs.
- SPS Acts/ Laws/Quality Standards require review
- Lack of SPS Management/inspection and quality certification system for meeting International trade requirements.

Suggestion to resolve Pre and Post harvest Issues

- Proper harvesting at proper maturity
- Strengthening of Laboratory Facilities
- Promotion of Food Safety Measures
- Selection of varieties for better shelf life
- Avoid from the damage of fruit during harvesting.
- Cold Storage Container should be free from eggs or larvae of insects.
- In order to preserve the produce quality different post-harvest techniques are recommended for variety of produce. These techniques include; hyper cooling, refrigeration and freezing, modified atmosphere packaging, modified packaging storage, control atmosphere storage, skin coating, hypo-baric or low pressure storage, irradiation, dehydration, canning, high pressure processing and pulsed electric fields and pulsed light applications.

MANAGEMENT TIPS

How to Improve your Workplace And Team Communication

Here are five simple strategies you can implement for effective workplace and team communications that will help improve team productivity, engagement and foster a collaborative culture.

1. Build and Maintain Internal Relationships: One on one time can make a huge difference in effective communications. With today's "remote" workers and telecommuters, this can be even more important for those who don't already spend all day in office together. Respect their time and keep your meetings brief and friendly, a short lunch or coffee is ideal, somewhere away from the distractions and pressures of the office environment.

2. Collaborate Whenever Possible: Collaboration among teams whether virtual, remote, in person or cross department is vital. As the old saying goes, two minds are better than one. Whether you need a fresh idea from a different perspective, or simply need some confirmation on an idea you are already working on, ask for help. Being available to help others is the flip side of this coin and does a lot to build communications and trust

3. Keep Your Meetings Short: Only hard core loners hate all meetings on principle, and you can do a lot to make your meetings valuable to all concerned by keeping them short and focused. Keep meetings regular, but only as frequently as is actually productive to minimize the frustration associated with interruptions.

4. Avoid Impersonal Communication: It's easy to get overwhelmed with too much communication. This can be worse than not enough. To combat this, avoid the urge to send copied messages to those who don't really need them. Make your communication targeted. The extra time it takes to personalize messages, at least to smaller groups if not individuals, will be made up for by the seriousness your communications will be treated with. By respecting your team members and only giving them what they need, you save them time in sorting out the essential information as well.

5. Open Source Best Practices: Even those who consider themselves least creative, have brilliant ideas from time to time. By providing a place to share the tips and tricks that are working best, you can open source your own best practices among your team members. *Source: Jessica Miller-Merrel, <http://www.workology.com/>*

Give Employees What They Need

What do employees want from their managers? It's a seemingly simple question without a single answer. Focus on these basic requirements:

- **Communicate.** Let employees know what's going on in your organization.
- **Buffer.** Protect your team from outside interference.
- **Provide resources.** Make sure employees have the tools necessary for doing good work.
- **Connect.** Help employees get to know each other and form useful workplace relationships.
- **Recognition.** Tell employees when they're doing good work.



Source: <https://www.managebetter.biz>

Let Employees Feel Responsible for Owning What They Do

Leaders can help employees feel responsible for owning what they do, even if they aren't actually shareholders, writes Susan Fowler. People who have a sense of ownership in the company they work for treat



the company differently than those who don't. They realize that the more they contribute to the company, the better chance the company has of succeeding. And, a healthy company leads to job security and opportunities for growth. An ownership mindset can become a means for experiencing your psychological need for competence and growth.

Source: Susan Fowler, <http://smartbrief.com/>

NATIONAL NEWS

Pad Spends Rs 113.6 Million to Improve Soil Productivity

Punjab Agriculture Department (PAD) has launched a five year comprehensive plan costing Rs 113.655 million in order to improve productivity and profitability through soil diagnostics for the promotion of balanced use of macro and micro fertilisers and soil amendments across the Province. Sources in Agriculture department told Business Recorder on Thursday that under the plan special steps were being taken for farmers' facilitation through modernised extension service in Punjab. Under the programme Soil sampling kits had been distributed while motorbikes had also been provided to the extension agents including Sialkot across Punjab followed by training programme through specialists. It may be mentioned that as many as 55 motorbikes had been provided to extension agents in Sialkot, Daska, Pasrur and Sambrial tehsils of Sialkot district to streamline the activities in befitting manners.

Promotion of Rose Farms in Punjab Soon

Necessary arrangements are being finalised to launch a comprehensive plan to develop rose farms for high quality grafted (cut flowers) especially roses across the Punjab. Currently low quality of roses were being cultivated and sold in domestic market as well as exported to Middle East countries from Pakistan. The concept of this proposed plan was to promote floriculture and to produce quality grafted roses for enhancing the radius of export to European countries.

Punjab Agriculture Department is intended to provide general information on the opportunity for the investors in the floricultural sector to develop flowers farm of roses for supply in local market. Provincial Agriculture department was extending guidance to the growers for cultivation Hybrid Tea Rose in their fields and increase income to many folds. It is high time that business community of Sialkot should take drastic steps for initiating the floriculture project in the city. The timely action would not only help in increasing the export volume but also generate employment opportunities in the area.

Government Plans to Cover 800,000 Hectares Area under SLMP

The government is planning to cover an area of around 800,000 hectares in 200 villages of 14 districts

of the country under Sustainable Land Management Programme. The integrated activities will be performed in agriculture, forest, irrigation, livestock, rangelands and soil conservation/stabilisation sectors. This was briefed to a meeting of the Programme Steering Committee on the Sustainable Land Management Programme (SLMP, Phase-II) that took place here on Friday in the chair of Secretary Ministry of Climate Change Syed Abu Ahmad Akif. Ministry of Climate Change is taking care of the programme in partnership with United Nations Development Programme-Pakistan (UNDP) and Global Environment Facility (GEF).

Village Committees to Oversee Weed Eradication Campaign

The Punjab Agriculture Department (PAD) will set up committees at village level to make the forthcoming weed eradication campaign a success. The committees will comprise lumberdar, patwaris, officials of the provincial agriculture department and notables from other segments of the society.

The committees will support the farmers in the process of eradication of weeds from the farms. They will also collaborate with other social welfare organisations to educate the growers about damages caused by weeds. The Punjab Agriculture Department will also launch the awareness campaign at its local offices, schools, colleges and public and private places. Seminars will also be arranged besides hanging banners at prominent places.

Source: www.brecorder.com

To Increase Exports, Sindh Forms Agriculture Development Board

The Sindh government has formed an agricultural development board for improving the productivity, quality, and standard of crops and other agricultural products in the province to increase their export. The Sindh chief secretary notified that the board would also address the issues faced by growers and other stakeholders in terms of policymaking.

The 27-member board will be headed by the provincial minister for agriculture, supply and prices. The Sindh Agricultural Growth Project director will act as the secretary of the board. The terms of reference of the Agricultural Development Board include devising ways and means for increasing productivity, quality, and standard of agricultural produce in the province.

Source: www.thenews.com.pk

ZTBL NEWS

Inauguration Ceremony of ZTBL Sports Club

Honorable President of ZTBL, Syed Talat Mahmood, has recently inaugurated ZTBL Sports Club.



The facilities include Gymnasium, Lawn & Table Tennis, Golf academy, Taekwondo, Ninja, Aerobics, Yoga and Cricket academy. These facilities are currently available to ZTBL & KSSL executives and staff and their children on becoming member of ZTBL Sports Club.



Launch of Financing for Hay Packing Scheme

To facilitate the farming community and to overcome problems of dairy/livestock animals especially during off season, ZTBL has decided to introduce Hay Packing Scheme. This scheme has been launched in all branches of the Bank throughout the country. All new and old creditworthy farmers are eligible to get financing under this scheme. However preference will be given to those farmers who are already engaged in this activity/business.

ZTBL Won Suzuki Vitara Polo Cup 2016

ZTBL clinched the Suzuki Vitara Polo Cup 2016 trophy after trouncing Pebble Breakers by 8½-3 in the final played at the Lahore



Polo Club (LPC) ground. The match started with a field goal by Mumtaz Niazi to give ZTBL, which had half goal handicap advantage, 1½-0 lead. Agha Musa



then scored for Pebble Breakers to make it 1½-1, but Saqib then hit a fantastic field goal to finish the first



chukker at 2½-1. The second chukker was fully dominated by ZTBL as Taimur Mawaz Khan scored tremendous two goals to provide his team 4½-1 lead. Pak Suzuki Motor General Manager Staff Regional Head Syed Wajahan Ali graced the final as chief guest while LPC President Irfan Ali Hyder, Suzuki Township Motors CEO Mir Shoaib Ahmad, Suzuki Deputy Marketing Manager Ubaid Ahmad, ZTBL Sports Head Col (R) Khalid Mehmood, LPC executive committee members and a larger number of polo enthusiasts were also present on the occasion.

First Meeting of Soybean Taskforce



In a meeting held on 9 January 2017, Chairman Board of Directors constituted a “Soybean Task-Force” in

order to revive the cultivation of this crop in the country. Mr. Khalil Sattar - Chairman PPA/CEO K&N's Poultry, Dr. M. Azeem Khan- D.G.NARC, Dr. M. Amjad- Director (Oilseed) PARC & Dr. M. Ayub Khan- Director (Oilseed) NARC and ZTBL executives attended the meeting chaired by Chairman ZTBL, Syed Yawar Ali. It was decided to include concerned stakeholders like seed development companies, research institutes, progressive farmers, solvent oil extractors in the consultation process in order to make concentrated efforts for revival of Soybean crop since Pakistan spends a handsome amount of foreign exchange on import of Soybean.

ZTBL Financing to NAVTTC Trained Rural Youth as Services Provider

ZTBL is striving hard to provide agri. Services to the rural farming community as well as to create opportunities for rural youth to earn their livelihood. In this relevance, National Vocational and Technical Training Commission (NAVTTC) arranges training to the rural youth at various centres to enable them to perform various agri related activities at their own or to provide services to the farming community.

In order to provide credit assistance to such NAVTTC trained rural youth to become service provider for the farming community, a scheme has been launched by the Bank.

This scheme is initially being launched as pilot project in selected ZTBL branches falling under Lahore, Faisalabad, Multan, Islamabad, Karachi, Hyderabad, Mirpurkhas, Abbottabad, Peshawar, Muzaffarabad & Gilgit-Baltistan zones.

Credit Extension in Balochistan

Pursuant to the efforts for commencement of long stagnant operations of ZTBL in the province of Balochistan a visit has been made by the Executives of the Bank with various Provincial Government officials. The team of Head Office Executives, comprising of Sheikh Aman Ullah, SEVP and Mr. Farhat K. Hashmi, EVP Planning, Research & Technology Division met Mr. Marcel Stallen, International Project Manager of FAO and discussed various viable possibilities for extension of credit in

Balochistan and inducement towards agriculture led economic opportunity and activities generation. Mr. Stallen briefed the ZTBL's team in detail about the Australia-Balochistan Agri-Business Project aiming at inculcation of business skills and creation of value addition facilities for Balochistan farmers. He further explained that Australia – Balochistan Programme under FAO is under implementation and expected to be reaching to an end by 2017-18. FAO mission also visited ZTBL head office in the first week of December, 2016 and held further discussions on the aforesaid project.

Gomselmash – Belarus Delegation Visited ZTBL



H.E. Mr. Andrei Ermolovich along with a Gomselmash delegation visited ZTBL head office for exploring opportunities for technical collaboration with ZTBL. Gomselmash, Belarus based company, is one of the largest manufacturers of agricultural machinery ranking among the world market leaders of combine harvesters and other complexes of agricultural machines, seeking to market their products using ZTBL platform. The meeting was business conducive and envisaged to be beneficial for all stakeholders.



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