

Study of Nursery Business in Harbin Region

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ABSTRACT

A project on study of nursery business in Harbin region, Heilongjiang (china) was initiated during the 2013. About 64 % of the nurseries deals with the plants of mix categories, 28 % of them recorded that flowering plants species were in high demand and ornamental plants, 80 % of them obtained seed from Beijing, Wuhan and Xian , 52 % of them used plastic tubes and pots for growing of seed, 48 % of them used garden soil, manures and silt as a major component of plant growing media, 64 % of them recorded no application of any fertilizer, 72 % of the respondents recorded that there is only insect attack in their nurseries, 92 % of them apply insecticide at their nurseries, 64 % of them reported that there is great demand for imported plants, 100 % of the respondents reported that there is no availability of green house facility in the majority of nurseries, 60 % of them recorded high sale in spring season, 68 % of them reported that they used green cloth and plant shed as a type of shed at their nurseries, 76 % of them recorded that they pay rent to the government, 76 % of them used both type of propagation methods, 84 % of the respondents reported that they have nursery grower association, Furthermore most of them demanded training about recent research/mythology, certified seed and stuff, easy water availability, low priced fertilizers, pesticides and Bank loans with easy installments and procedure from the Government.

INTRODUCTION

Beauty is directly related to the nature that causes human inspiration. In other words beauty is the other name of nature. The early Greeks and Romans emphasized on beauty and attractiveness as evident from their culture, which exists today. Throughout the history beauty has played an important role in the development of cities, homes, country sides, architecture, fine arts, music and personalities. Nowadays it is of ever increasing importance and demand. The horticulturist combines these beauties of nature with artistic beauty to enhance the beauty of homes and other living/working places to make them more pleasant and comfortable. Plants of diverse types are used in this regard.

Today the man is much more ozone conscious. Plants are the best remedies for all such environmental hazards. This proves their prime importance both as indoor and outdoor.

Besides modern man has become very health conscious. Studies have revealed that lawn establishment is necessary for Oxygen provision. Plants and managed lawns provide the best solution for this very aspect. Production provision of materials for the aesthetic sense contentment is the keys to this solution. This is "Behind the Curtain" story for nursery business establishment in the modern world. The nursery business has gained momentum all over the world. Nursery establishment could be for the provision of fruit trees, ornamentals or any other related services. The use of nursery determines its types. In particular the ornamental nursery provides all types of plants (indoor as well as outdoor), pots and grasses. The need of a pleasant environment can never be ignored. The pleasure that plants induce in that environment is not measurable. This aspect puts forward the advantage of nursery existence. It is quite an easy job to get plants from a nursery, bring them home and plant them where required. In Pakistan there is an increasing demand for this business. There are quite big nurseries established and being established. People are becoming aware of the importance of plants not only in big cities but also in small cities.

In Harbin, the trend towards this business is not novel. Nurseries have been established in Harbin. Studying mainly these areas, they situated at a relatively closer distance from each other. As the factors like sociological, economic and ecological determine the overall success of the business. So despite of lying at a closer distance, the areas are located at different intervals, vary in population, per capita income and temperature. The establishment of fully planned colonies i.e. Harbin, University Town and media has influenced the overall population about lawn management that finally has provoked the demand for nursery business even more than before. Having noticed this trend, need was felt to assess the overall nursery business of these locations.

MATERIALS AND METHODS

The research was based on a survey conducted by interviewing all the nurserymen in Harbin, Heilongjiang.

The following action plan was followed:

A questionnaire was prepared about different aspects, facilities, problems and available resources at nurseries.

Pilot study was conducted to see the validity of the questionnaire. This was done by interviewing a few nurserymen in advance. After the pilot study the questionnaire was found quite successful. After making a little bit of changes it was finalized for data collection.

The data was collected from different nurseries of Heilongjiang province. Two nurseries of northeast Agricultural University Harbin, Department of Horticulture (Ornamental research nursery and fruit nursery). One nursery of northeast Forest Institute (Silviculture nursery).

Different parameters were studied during the interviews. These parameters included type of nursery, highly demanded species, source to obtain seed, seed growing technique, growing media, any fertilizer used, any nursery diseases and insect attack, any insecticide used, any demand of imported plants, do you have green house, season of high sale, type of shed used, duty and tax paid to government, method of propagation used and any nursery grower association.

RESULTS AND DISCUSSIONS

Nursery business is one of the most demanding in terms of money, care and attention. At the same time it is not very much promising in case of natural hazards such as frost damage, severe heat, hail storm, untimely rainfall or dry weather etc. But like any other business in the world it requires attention, care and hard work, there is no doubt in the high output. There is a range of factors influencing the overall profit. All these factors are equally important in contributing to the overall profit.

Percentages

The results were compiled by calculating the percentages of parameters studied. These parameters includes type of nursery, highly demanded species, source to obtain seed, seed growing technique, growing media, any fertilizer used, any nursery diseases and insect attack, any insecticide used, any demand of imported plants, do you have green house, season of high sale, type of shed used, duty and tax paid to government, method of propagation used and any nursery grower association.

Corresponding tables of percentages and their relevant description is given as under from Table 1-16

Results and discussions are presented step by step as follows:

Type of nurseries

Table-1 indicates that about 64 % of the nurseries deals with the plants of mix categories. During survey it was concluded that 4 % of the respondents have ornamental nurseries and 8 % of the nurseries are fruit nurseries. It was noted that the percentage of forest nurseries was 24 %.

Table-1 Type of nurseries

S. No	Types	No. of respondents	Percentage
1	Mixed nursery	16	64
2	Ornamental nursery	1	4
3	Fruit nursery	2	8
4	Forest nursery	6	24
Total		25	100

It was observed during the survey that most of the respondents (64 %) have mixed type of nursery business. About 4 % of the respondents recorded that they have ornamental type of business. It was noted in the survey that 8 % of the respondents have fruit nurseries, while 24 % have forest type's nurseries.

Highly demanded species

Table-2 shows that 8 % of the respondents recorded that flowering plants species were in high demand and ornamental plants, while 19 % of nurserymen recorded that seasonal plants have high demand, while 22 % respondents recorded that fruit plants have high demand and 33 % respondents recorded that forest plants have high demand.

Table-2 Highly demanded species

S. No	Plant species	No. of respondents	Percentage
1	Flowering plants	7	8
2	Seasonal plants	6	19
3	Fruit plants	3	22
4	Forest plants	2	33
5	Ornamental plants	7	18
Total		25	100

Majority of the respondents (18 %) recorded that flowering as well as ornamental plants each demanded equally. A few nurserymen (8 %) recorded the demand for forest plants, a few of them (22 %) recorded fruit plants in demand and some of them (19 %) recorded the demand for seasonal plants. A similar study was reported by Uva (1999) on New York state green house industry. He indicated that bedding and garden plants accounted for highest sales in total revenue generated (90.4 %) from the sale of Forest plants.

Source to obtain seed

According to Table-3 majority of the respondents (80 %) obtained seed from, Beijing, Wuhan and Xian. Where as 4 % respondents obtained seed from harbin , while 12 % respondents get from local market. Only 4 % respondents relied only on their own production.

Table-3 Source to obtain seed

S. No	Sources	No. of respondents	Percentage
1	Beijing, Wuhan and Xian	20	80
2	harbin	1	4
3	Local market	3	12
4	Own production	1	4
Total		25	100

Majority of the respondents (80 %) obtained seed from Beijing, Wuhan and Xian. Where as 4 % respondents obtained seed from harbin, while 12 % respondents get from local market. Only 4 % respondents relied only on their own production. A similar study was reported by Uva (1999) who indicated that nurseries of local community usually relay on the large scale nursery dealers.

Seed growing technique

Table-4 shows that most of the respondents (52 %) used plastic tubes and pots for growing of seed. 32 % respondents used pots for growing. Only 4 % of respondents give preference to flate beds and 12 % nurserymen used flate beds pots and plastic bags for growing seed.

Table-4 Seed growing technique

S. No	Growing techniques	No. of respondents	Percentage
1	Plastic tubes and Pots	13	52
2	Pots	8	32
3	Flate beds	1	4
4	Flate beds, Pots, Plastic bags	3	12
Total		25	100

It was noted during this survey that most of the respondents (52 %) used plastic tubes and pots for growing of seed. 32 % respondents used pots for growing. Only 4 % of respondents give preference to flate beds and 12 % nurserymen used flate beds pots and plastic bags for growing seed. This data was found to be inline with Uva (1999) who show about similar results.

Season of High Sale

As shown in Table V majority of the respondents (63%) termed June-July as the season of high sale. 25% respondents recorded the season of high sale from January-April and through summers. 8.0% respondents recorded January-march the season of high sale. 4.0% was the no response rate. The reason could be that spring sets in from Jan- Apr with ample rainfall and conducive weather for plant growth. Inspired by the natural beauty and conducive environment for plant growth, people rush to the nurseries to buy plants. The same sort of research was reported by Bent (1999) which depicted that flower sale in China was seasonal.

Table V Season of high sale

S. No	Season	No. of respondents	Percentage
1	January- March	02	08.0
2	January- April and Summers	06	25.0
3	June- July	15	63.0
4	No Response	01	04.0
Total		24	100

Growing media used

Table-5 indicates that most of the respondents (48 %) used garden soil, manures and silt as a major component of plant growing media. Only 4 % nurserymen used garden soil and manure. 12 % of the respondents used clay soil, manure and silt as a source of growing media. The same percentage (12 %) of respondents used silt, manure and sand as a media, while 24 % respondents used silt and manures.

Table-6 Growing media used

S. No	Media	No. of respondents	Percentage
1	Garden soil, Manure (FYM, chicken, leaf mold, gober) and Silt	12	48
2	Garden soil and Manure (FYM)	1	4
3	Clay soil, Manure (FYM) and Silt	3	12
4	Silt and Manure (FYM, chicken)	6	24
5	Silt, Manure (FYM) and Sand	3	12
Total		25	100

It was observed during the survey that different nursery used different type of media. It was recorded that 48 % of the respondents used a mix media of garden soil, manures and silt. About 24 % of them used silt and manures,

while 12 % of the respondents rely on silt, manure and sand. A mixture of garden soil and manure was noted to be used by only 4 % of the respondents similarly a mixture of clay soil, manure and silt was used by about 12 % of respondents. Scagliarini (1998) addressed the same issue by working on the effect of substrate on different flowering plants and found good results when compost comprised of 50 % growing medium. This growing medium also reduced fertilizer application by 50 %.

Any fertilizer used

Table-6 shows that only 4 % of the respondents recorded to use both synthetic fertilizers (DAP, Urea etc) and natural (FYM, leaf mold etc). Most of the respondents (64 %) recorded no application. 32 % respondents recorded to use only synthetic fertilizers such as DAP, Urea etc.

Table-7 Any fertilizer used

S. No	Fertilizers type	No. of respondents	Percentage
1	Synthetic (DAP, urea etc) and Natural (FYM, leaf mold etc)	1	4
2	Synthetic (DAP, urea etc)	8	32
3	No application	16	64
Total		25	100

Majority of the nurserymen (64 %) responded that they do not use of fertilizer in their nurseries. Only 4 % respondents recorded that they use both synthetic and natural fertilizer, while 32 % recorded that they use only synthetic fertilizer.

Any nursery disease and insect attack

Table-7 shows that most of the respondents (72 %) recorded that there is only insect attack in the nursery. 20 % respondent's recorded fungal diseases and insects attack, while 4% of the recorded that there is viral and fungal diseases and insects attack. The same percentage (4 %) of respondents recorded only viral diseases present in the nursery.

Table-8 Any nursery disease and insect attack

S. No	Diseases and insect attack	No. of respondents	Percentage
1	Fungal diseases and insects attack	5	20
2	Viral and fungal diseases and insects attack	1	4
3	Viral diseases	1	4
4	Insects attack	18	72
Total		25	100

Most common pest was found to be the insects for which majority of the respondents (72 %) made a complaint. About 20 % of the respondents recorded that fungal and insect attacks are the main problems in their nurseries. 4 % of the nurserymen complaint against the attack of viral and fungal diseases along with insect problem, while same percentage (4 %) of respondents made a complaint about viral diseases. Emphasizing on the use of biological control, Orth (1997) identified that it was the distinctive element giving the business a competitive edge in Friesing (Germany).

Any insecticide used

According to Table-9 most of the respondents (92 %) apply insecticide at their nurseries. Only 8 % of the nurserymen do not apply any insecticide at their nurseries.

Table-9 Any insecticide used

S. No	Application	No. of respondents	Percentage
1	Yes	23	92
2	No	2	8
Total		25	100

During the survey 92 % of the respondents recorded that they apply insecticide at their nurseries, while 8 % of them do not apply any insecticide.

Any demand of imported plants

Table-10 indicates that in most of the nurseries (64 %) there is great demand for imported plants, while 36 % respondents do not have any demand for imported plants.

Table-10 Any demand of imported plants

S. No	Demand	No. of respondents	Percentage
1	Yes	16	64
2	No	9	36
Total		25	100

It was recorded in the survey that in most of the nurseries (64 %) there is demand of imported plants, while 36 % respondents do not have any demand for imported plants.

Green house facility

It is clear from the Table-11 that there is no availability of green house facility in the majority of nurseries in harbin valley.

Table-11 Green house facility

S. No	Availability	No. of respondents	Percentage
1	Yes	0	0
2	No	25	100
Total		25	100

According to the results obtained from survey it was noted that there is no availability of green house facility in the majority of nurseries in harbin valley. Results show that 0 % has this green house facility.

Season of high sale

Table-12 shows that majority of the respondents (60 %) recorded high sale in spring season, while 12 % respondents recorded high sale in winter season. And 28 % respondents recorded high sale in summer season.

Table-12 Season of high sale

S. No	Season	No. of respondents	Percentage
1	Winter	3	12
2	Summer	7	28
3	Spring	15	60
Total		25	100

Majority of the respondents (60 %) recorded that the season of high plant sale was spring season. But there were certain nurseries where the plant sale was during summer season (28 % of respondents), while some of the nurseries (12 %) recorded that sale is high during winter season. The same sort of research was reported by Bowers (1999) which depicted that flower sale in China was seasonal.

Type of shed used

Table-13 shows that majority of the respondents (68 %) used green cloth and plant shed. 12 % of the respondents recorded that they only used green cloth shed. Where as 8 % of the respondents used plant, green cloth, and plastic shed. 4 % of the respondents rely only on plant shed. Similar percentage (4 %) of respondents used plant and plastic shed. About 4 % of the respondents recorded that they did not use shed in the nurseries.

Table-13 Type of shed used

S. No	Shed	No. of respondents	Percentage
1	Plant shed, Green cloth shed, Plastic shed	2	8
2	Plant shed	1	4
3	Green cloth shed	3	12
4	Green cloth shed, plant shed	17	68
5	Plant shed, Plastic shed	1	4
6	No shed	1	4
Total		25	100

It was observed that majority of the nurseries 68 % in harbin valley use green cloth, plant sheds and 12 % of the respondents recorded that they use only green cloth shed. 8 % of them used all types of shed which include plant shed, green cloth shed and plastic shed. 4 % of the nurseries rely just on plant shed. Similar percentage (4 %) was observed in the nurseries which use plant and plastic shed. About 4 % of respondents recorded that there is no use of shed in these nurseries.

Duty and tax by the government

Table-14 indicate that majority of the respondents (76 %) recorded that they pay rent to the government, while 16 % of the respondents do not pay any charges. About 4 % of the respondents recorded that they pay regular tax to the government. 4 % of the respondents recorded no response.

Table-14 Duty and tax by the government

S. No	Options	No. of respondents	Percentage
1	Tax payers	1	4
2	Rent payers	19	76
3	Do not pay (Government)	4	16
4	No response	1	4
Total		25	100

In this survey majority of respondents (76 %) recorded that they pay rent to government, while 16 % of them have no charges. About 4 % recorded that they pay regular tax to the government. 4 % of the respondents recorded no comments on this topic.

Methods of propagation

Table-14 shows that most of the respondents (76 %) used both type of propagation methods. 20 % of respondents

used only asexual propagation, while 4 % respondents used only sexual propagation.

Table-15 Methods of propagation

S. No	Propagation	No. of respondents	Percentage
1	Asexual propagation	5	20
2	Sexual propagation	1	4
3	Both type of propagation	19	76
Total		25	100

The results collected in this survey shows that 76 % of the mixed nurseries in harbin region use sexual and asexual type of propagation to increase their plant population size. 20 % of respondents recorded that they just use asexual propagation while 4 % of the nurseries rely on sexual method of propagation for increasing plants.

Any nursery grower association

It is clear from the Table-16 that majority of the nurserymen (84 %) have association, while 16 % of nurseries have no association.

Table-16 Any nursery grower association

S. No	Present	No. of respondents	Percentage
1	Yes	21	84
2	No	4	16
Total		25	100

It was noted in the survey that majority of the nurseries (84 %) in Harbin have in an association. Which shows strong unity among nursery growers while some of the nurseries (16 %) have no association in their region?

CONCLUSION AND REMMENDATIONS

Each nursery must hire at least one specialist to technically manage the nursery that could be helpful in generating more profit and should provide home delivery/landscape services/internships to give their business a competitive edge. Besides, Govt. should provide tube wells to nurserymen on self-help basis and by sharing half the expenditure with them. It is also noted that need up-to-date information connect to the nursery business and hence it is recommended strongly that the Department of Horticulture should arrange a regular program to carry up-to-date research/training/literature to nurserymen. On the basis of research it is recommended to the nurserymen to get the areas of the nursery expanded and different types of plants should be present at their nurseries to generate more profit. Each nursery must hire one specialist; provide home delivery, landscape services and internships to going postgraduate and graduate give the business a competitive advantage.

Besides:

- Department of Horticulture and other research and other departments of harbin must arrange a regular programmer to provide up to date technical training, literature and advance research facilities to nurserymen.
- Ornamental Horticulture students of the Department must be provided a six months internship at least, in a nursery as a requirement for degree.
- Govt. loans should be made reliable, following an easy procedure and installments with interest rate according to the recovery of the nurserymen.
- Certified seed and propagative material should be provided to nurserymen by the Govt.
- Technology oriented communication (internet access) should be taught to them by raising the educational standards of those involved in this business.
- An association of nurserymen should be made to present their problems to Govt. as a forum.

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