April' 25, Vol. 23. No.2 | ISSN : 0972 -8945 (Print) 3048 -6165 (Online)

Colonial Interventions and Agricultural Evolution: The Horticultural Legacy of Dogra-Era Jammu and Kashmir

Suhail Farooq*

Research Scholar, Department of History, Aligarh Muslim University

*Corresponding Author Email: mirsuhail455@gmail.com

Abstract: *The Dogra period (1846–1947) marked a pivotal era for horticultural transformation in Jammu and Kashmir, driven by colonial influences and modern agricultural practices. This study examines the institutionalization of horticulture as an independent sector, exploring key developments such as the establishment of nurseries, the introduction of European fruit varieties, and the adoption of scientific techniques like grafting and budding. Utilizing primary sources, including annual horticultural and administrative reports, the paper highlights the socio-economic impact of fruit exports and the role of European expertise in shaping the region's horticultural landscape. The findings underscore horticulture's evolution from subsistence to a commercialized enterprise, revealing its enduring legacy in the region's agricultural economy.*

Keywords: Colonial horticulture, Dogra period agriculture, Jammu and Kashmir economy, Viticulture and fruit production, Agricultural modernisation.

INTRODUCTION

The Dogra administration in Jammu and Kashmir (1846 1947) was instrumental in shaping the region's political and economic landscape, driving significant transformation during this period. Agriculture, serving as the cornerstone of the state's economy, witnessed substantial advancements under the Dogra rulers. Notably, they, supported by British colonial interventions, implemented various measures aimed at modernising the agricultural sector, with a particular emphasis on horticultural practices. Before the advent of modern horticultural practices, the region's agricultural output was largely subsistence-based, with farmers relying on traditional methods of cultivation and limited access to external markets. William Moorcroft, a British explorer and veterinarian, visited Kashmir during the Sikh period in the early Nineteenth century, observed that "many thousands of acres at the base of the hills were covered with apple and pear trees, and vines in full bearing, but without any owners." His account highlighted the abundant, yet unmanaged, fruit production in the region during his time, reflecting the untapped potential of Kashmir's fertile landscape (Moorcroft, 1832, p. 253). However, by the late Nineteenth and early Twentieth century, Jammu and Kashmir witnessed a dramatic shift towards commercial agriculture, driven by the demand for high value fruit crops like apples, walnuts, and almonds. By utilizing primary sources such as annual horticultural reports and administrative records, this study explores the institutionalization of horticulture as an independent sector and its enduring legacy in shaping the agricultural and economic identity of Jammu and Kashmir.

EARLY DEVELOPMENTS IN HORTICULTURE AND VITICULTURE

Horticulture in Jammu and Kashmir, particularly in the valley of Kashmir, was initially a secondary agricultural activity. Historical records such as the *Rajatarangini,* mentions grape cultivation in Kashmir, with Kalhana noting that grapes, '*which were scarce in heaven, were abundant in Kashmir'* (Kalhana, 1900, pp. 428-29). Until the mid-Nineteenth century, viticulture dominated agricultural practices, with wine production being a major focus. Although wine production flourished under early Afghan rule (1752-1819), it was later prohibited by Atta Mohd Khan (1800-1805). The industry saw a revival under Sikh rule (1819-1846), when large-scale wine production resumed, though finer grape varieties remained rare, with vines often growing intertwined with mulberry trees (Keenan, 1989, p. 31). The potential for fruit cultivation was recognised but remained underutilized due to the absence of modern

agricultural techniques and infrastructure. The role of the British colonial administration in the development of horticulture in Jammu and Kashmir cannot be understated. Although the Dogra rulers initiated efforts to modernize agriculture, the British influence was crucial in transforming horticulture into a commercially viable industry. The British provided expertise, infrastructure development, and policy support, which helped expand fruit cultivation and improve agricultural practices.

The groundwork for horticulture was laid as early as 1856, when French agents began arriving in Kashmir for the purchase of shawls. One such agent, M. Dauvergne, observed the wild grapevines growing in the valley during his stay between 1865 and 1882. His initial experiments in winemaking, though personal, caught the attention of Maharaja Ranbir Singh, who encouraged him to continue wine production for the state. M. Dauvergne, however, pointed out that European grape varieties needed to be introduced, and professional winemakers and distillers had to be recruited from France to improve wine quality. In response, the state contacted the School of Horticulture in Versailles, which recommended M. Ermens, a former head gardener of public works in Paris. He arrived in Kashmir in 1875 and initiated several horticultural experiments. His efforts involved introducing European fruit plants and horticultural tools, establishing an experimental farm at Chashma Shahi (Srinagar). Although M. Ermens succeeded in growing grapes, his attempts to produce wine failed. He recommended hiring two more French experts, M. Bouley and M. Peychaud, to oversee the vineyards and wine production. Despite these efforts, it became evident that the region's viticulture industry could not thrive without adequate infrastructure, such as cart roads linking Kashmir with the rest of India (British India). As a result, M. Bouley and M. Peychaud shifted their focus from wine production to fruit cultivation. In the winter of 1886-87, with the support of Sardar Roop Singh, the Governor of Kashmir, M. Peychaud collected about twenty five thousand wild fruit stocks. This marked the beginning of a large-scale nursery in the valley, which would go on to play an invaluable role in developing the state's fruit industry. The grafted fruit plants from this nursery were eventually distributed to state orchards (Bamzai, 2008, 700).

During a conference in Srinagar in September 1886, attended by Sir Edward Buck, the Resident, and Mr. Lawrence, the Settlement Officer, the state council discussed the horticultural plan in detail. It was decided that the success of this initiative would depend on European supervision. Mr. Gollan, an experienced gardener, was briefly hired but did not return after his initial three month period, leading to M. Peychaud assuming full responsibility (Bamzai, 2007, p. 226). This marked the beginning of large-scale nursery development in the valley, laying the foundation for Kashmir's future horticultural success.

By 1889, under the direction of Sir Edward Buck, head of the Revenue and Agriculture Department, a detailed scheme was submitted to improve the vine and fruit culture in Kashmir. This scheme was strongly supported by the Viceroy and the Resident of Kashmir and laid out a ten year plan to develop the region's horticultural potential (July 1889).

INSTITUTIONALISATION OF THE HORTICULTURE

In 1903, recognizing the potential of fruit cultivation, the Durbar of Jammu and Kashmir established a separate Horticulture Department to oversee the development and expansion of horticultural activities in the state. In 1907, the state formally established a Department of Agriculture and Horticulture. A year later, in 1908, a member from Kashmir began serving on the Board of Agriculture of the Government of India. The horticultural industry flourished in the years that followed, with Kashmir gaining a prominent position in India's export trade. The creation of this department signalled the formalisation of horticulture as a distinct sector of the economy, independent of viticulture. M. Peychaud was appointed as the first Director of the Horticulture Department. Under his leadership, the department focused on several key initiatives, including the establishment of nurseries to propagate fruit plants and distribute them to local farmers and state orchards. These nurseries became the backbone of the state's horticultural development. By 1903, nurseries had been set up in Thid Bagh, Panjgam, Verinag, and Naupura, with more nurseries being added in subsequent years (Triennial adm. Report 1901-04, pp. 280-84).

One of the department's early priorities was the introduction of European fruit varieties such as apples, pears, and plums. These fruits were grafted onto native root-stocks to improve their adaptability to the region's climate and soil conditions (Bamzai, 2008, p. 701). In 1914, under the leadership of Mr. A. M. Peychaud, who continued to lead the department as Director of Horticulture, a significant restructuring took place. Based on the recommendations of a committee, horticultural management in the Southern Tehsils was handed over to the Director of Agriculture. Meanwhile, the Northern Tehsils remained under the Horticulture Department's control, where smaller state owned orchards were converted into Demonstration Orchards. By 1915, following the abolition of vineyards, Shirazi Bagh was integrated into the Horticulture Department. From this point forward, the department focused solely on the central and northern tehsils (Adm. Report 1914, p. 51).

EXPANSION OF HORTICULTURAL ACTIVITIES

The early Twentieth century marked a period of rapid expansion for the Horticulture Department. Between 1914 and 1947, the department focused on modernising horticultural practices—by distributing seeds, grafted fruit plants, and agricultural implements, expanding plantation areas, and improving the quality of fruit production. Agricultural and fruit shows were held annually to promote public interest in modern horticultural and agricultural methods (Handbook of Jammu and Kashmir, 1947, p. 44). One of the most significant accomplishments of this period was the establishment of government run nurseries, which played a central role in the propagation and distribution of fruit plants to local Zamindars, landowners and private individuals (Report of Horticulture and Vineyards 1914, p. 7). By 1936–37, the state had developed 14 nurseries, strategically distributed across six tehsils of Kashmir and two tehsils of Jammu. The major nurseries included Udheywalla (Jammu), Khudwani (Kulgam), Sirhama (Anantnag), Lalmandi, Zukura, and Nasim (Srinagar), along with Pattan (Baramulla). (Adm. Report 1937-38, p. 63). These nurseries focused on grafting, budding, and the propagation of European fruit varieties, as well as indigenous species like walnuts, almonds, and apricots (Adm. Report 1934-36, p. 19).

Table 1 provides a detailed year-by-year account of the number of plants and seedlings transplanted, as well as the quantity of seeds sown in various orchards and nurseries across Kashmir and Jammu:

Table 1: **Annual Record of Plants and Seeds Sown**

Year	Plants Planted	SeedsSown
1902	74,414	N/A
1903	3,55,850	16 maunds 20 seers; 28,000 walnuts
1904	35,100 walnuts and 191,300 cuttings	8 maunds 36 seers
1905	N/A	8 seers of apricot seeds
1909	600 wild fruit trees	N/A
1912	1,82,870	8 maunds 1 seer
1913	16,550 plantings and 2,09,100 wild trees	1 maund 28 seers
1914	2,51,100	8 maunds 6 seers
1915	1,60,666	Approximately 2 maunds 8 seers
1917-18	3,800 walnuts in Muzaffarabad; 1,548 almonds, 1,550 mulberries, 150 apricots, 71 walnuts	N/A
1918-19	3,300 walnut plants	N/A
1919-20	3295 walnut plants in Chandigam and 3300 in Wayan forests.	N/A
1921-22	356 almond trees in Harwan, 244 in Trehgam	N/A
1925	11,500 seedlings	496 seers of seeds
1926	9000 seedlings	400 seers of seed
1928	87884 (it included departmental plantations, numbers sold and free.)	N/A
1929	93629 (it included departmental plantations, numbers sold and free.)	N/A
1930	96629 (it included departmental plantations, numbers sold and free.)	N/A
1938-39	6063 fruit plants in Govt. Gardens.	24 maunds 12 seers; 24,000 walnuts; 11,300 Spanish chestnuts
1939-40	300000 stock seedlings, 6164 fruit trees in Kashmir and 258 in Jammu.	N/A
1941	270482 seedlings of different stock.	19 maunds and 7 seers of seed nuts and pips, 24470 nuts were sown.
1943	4,33,660 wild and nursery plants.	1 ½ maunds seed pips; 26 maunds almonds, apricot, peach seeds; 22,830 Spanish chestnuts; 18,050 walnuts
1944	2,22,475 wild and nursery plants	1 maund seed pips; 15 maunds almonds, apricot, peach seeds; 18,000 Spanish chestnuts; 31,150 walnuts
1945	1,60,640 stock seedlings and cuttings	1 ½ maunds seed pips; 16 ½ maunds almonds, apricot, peach seeds; 9,800 Spanish chestnuts; 28,800 walnuts
1946	1,847 deciduous fruit plants, 1,800 almond plants, 90,000 stock seedlings	2 maunds 7 seers 3 chhataks seed pips; 9 maunds 22 seers 12 chhataks almonds, apricots, peaches; 7,000 chestnuts; 10,000 walnuts

(**Source**: *Compiled from the Annual Horticulture Reports, Administration Reports and Forest reports of the Jammu and Kashmir State for the respective years*. *Some of the plants and seeds also include Horse Chestnut, Spanish Chestnut, and English Oak. Also, data of some years is not available. *1 maund = 37 kg, 1 seer = 933 gm. Also, 1 Chhatak = 58.125 g.)

The plantations and seed sowing activities in the state of Jammu and Kashmir, as documented over several decades, reflects a concerted effort to develop the horticulture sector. In the 1930s, the department benefited from its involvement with the Imperial Council of Agricultural Research. Kashmir became one of the Council's constituent members, and the Director of Agriculture took part in its Advisory Board (Adm. Report 1934-36, p. 17). By the late 1930s, the department had successfully introduced modern horticultural techniques such as pruning and spraying to improve fruit yields and quality. In 1936, the state also formed the 'Fruit growers Cooperative Association,' an initiative that aimed to improve the marketing and distribution of fruit (Adm. Report 1936-37, p. 33). This cooperative enabled local fruit growers to access better markets, achieve higher revenues, and align their practices with national and international standards. In 1937-38, the department emphasised grading and improving packaging techniques for apples. Through experiments with late variety apples, exporters were convinced of the advantages of fruit grading, leading to premium prices. The department also distributed labels and wrappers, provided by the Agricultural Marketing Adviser to the Government of India, to support exporters. This initiative was part of a broader effort to regulate grading and ensure quality control, with a Grading and Marketing Regulation under consideration (Adm. Report 1937-38, p. 64). These efforts were supported by the Imperial Council of Agricultural Research, which provided technical assistance and funding for research initiatives

related to fruit production. In 1944, the Imperial Council of Agricultural Research approved the Fruit Research Scheme for Kashmir for a duration of 3 years, with a total budget of Rs. 17,772, with the Council contributing half of the amount (Handbook of Jammu and Kashmir, 1947, p. 45). By 1947, the activities of the department had expanded to cover both Kashmir and Jammu provinces.

BUDDING, GRAFTING AND HORTICULTURAL TECHNIQUES

Budding and grafting were crucial techniques in the modernization of horticulture in the State. The early efforts in grafting began in 1892, when 2,060 apple and pear trees were successfully grafted using European methods (Adm. Report 1892-93, p. 133). In 1895, the new methods of budding and grafting was met with initial resistance from local Kashmiris, who believed their traditional methods were superior. However, through demonstrations and the skilled intervention of European experts, the advantages of the new methods became evident (Lawrence, 1895, p. 350). By 1903, the total number of trees grafted reached 25,000, showcasing the increasing acceptance of these practices (Triennial Adm. Report 1901-04, p. 282) and by 1912, this figure had risen to 103,526 (Adm. Report 1912, p. 36). The table 2 provides a summary of the budding and grafting activities in Jammu and Kashmir between 1892 and 1946:

Table 2: Number of Trees Grafted

Year	Number of Trees Grafted
1892	2060
1903	25000
1912	103526
1938-39	252908
1946	210000

(**Source**: *Compiled from the Annual Horticulture Reports, Administration Reports and Forest reports of the Jammu and Kashmir State for the respective years.*)

The success of budding and grafting led to an increase in the production of high quality fruit varieties such as apples, pears, peaches, and almonds (Triennial Adm. Report 1901-04, p. 284). These techniques also contributed to the diversification of the region's horticultural output, allowing local farmers to cultivate a wider range of fruit species for both domestic consumption and export (Report of Horticulture and Vineyards 1914, p. 1).

PEST CONTROL AND DISEASE MANAGEMENT

As horticulture expanded, pest control and disease management became critical concerns for the Horticulture Department (Adm. Report 1927-28, p. 34). The Crop and Plant Act of 1934 helped regulate the import and export of plant materials to prevent the spread of pests and diseases. The department also implemented a compulsory spraying act to control pests like the San Jose Scale and Woolly Aphis.

To support orchardists, the government provided technical training and machinery for spraying fruit trees during the spraying season. Large quantities of diesel oil and fish oil soap were used for this purpose in both government and private gardens (Adm. Report 1935-36, p. 18). The department allocated grant was raised from Rs 6000 to Rs 16000 annually to facilitate these activities (Adm. Report 1927-30, p. 13). The annual report for 1939-40 highlights the extent of these efforts, with a considerable number of plants treated. In government orchards, 57,274 fruit trees, 3,23,592 nursery plants, and 4,440 ornamental plants were sprayed, while private orchards saw the treatment of 3,83,712 fruit trees and 14,210 other plants, with the owners bearing the costs. Government orchards utilised 19,089 gallons of diesel oil and 12,241 pounds of fish oil soap, compared to 7,829 gallons of diesel oil and 5,219 pounds of fish oil soap used in private orchards (Adm. Report 1939-40, p. 94). Fumigation of plants, particularly during plant distribution events, was also carried out using sodium cyanide and sulfuric acid (Adm. Report 1938-39, p. 122). These efforts helped protect fruit plants from pests and diseases, ensuring the continued success of horticultural activities in the region.

DISTRIBUTION OF FRUIT TREES AND ECONOMIC IMPACT

The distribution of fruit trees by the Horticulture Department played a central role in expanding fruit cultivation throughout the region. The department initially focused on distributing fruit trees to *zamindars* (landowners) and state officials free of cost. However, as demand for fruit trees grew, the department introduced a payment based system for non-agriculturists to manage distribution more effectively (Annual Adm. Report 1912, p. 36). Also in 1914, the position of Travelling Inspector was introduced to oversee the distributed trees and offer essential guidance to ensure that improved standards were upheld in future plantation efforts (Report of Horticulture and Vineyards 1914, p. 9). Table 3 summarises the distribution of fruit trees between 1892 and 1946:

Table 3: Distribution of Fruit Trees

Year	Total Trees Distributed
1892	6904
1903-04	14695
1911-12	78944
1929-30	93629
1939-40	134359
1946	123912

(**Source**: *Compiled from the Annual Horticulture Reports, Administration Reports and Forest reports of the Jammu and Kashmir State for the respective years.*)

The data given in the table 3 also illustrates the state's strategic role in expanding fruit cultivation, which had lasting economic benefits. As interest grew, particularly in European varieties, horticulture became a critical component of the region's agricultural wealth. The growing demand for fruit trees reflects the increasing interest in horticulture among local farmers and private landowners. By the 1940s, private nurseries began to flourish, particularly in Kashmir, where growers contributed significantly to the distribution of apple and almond seedlings. Out of a total of 1,34,359 plants distributed in 1940, 51,000 were apple trees, 500 were pear trees, 22,800 were almond trees, 17,600 were cherry trees,

and 4,800 were citrus trees (Adm. Report 1941-43, p. 89). The economic impact of horticulture was particularly evident in the region's fruit exports. The table 4 illustrates the growth in the value of fruit exports from Jammu and Kashmir:

Table 4: Value of Fruit Exports

Year	Value of Exports (Rs)
1892	238683
1902	458702
1914	867000
1934	1247055
1939	3127410
1943	2636000
1946	10401000

(**Source:** *Annual Administration Reports of the respective years, and The Imperial Gazetteer of India, 1909.* *The data also includes the exports of vegetables along with fruits.)

The cultivation and export of fruits were central to the region's agricultural income and trade, significantly boosting the local economy. The fruit trade in Kashmir saw significant growth by 1895, with improvements in horticulture leading to optimism about the sector's future expansion. Walnuts, once mainly used for oil production, were now being exported in large quantities, while apples and pears were finding a market with Punjabi traders (Lawrence, 1895, p. 389). The value of fruit exports rose steadily throughout the Dogra period, with significant increases observed during the 1930s and 1940s. By 1946, the value of fruit exports had reached an impressive Rs. 10,401,000 (Adm. Report 1946, p. 42), marking the culmination of decades of investment in horticultural infrastructure, research, and market development. The primary markets for Kashmir apples were Punjab and Delhi, with increasing exports as transportation and market access improved over time (Lawrence, 1895, p. 350; Annual adm. Report 1912, p. 13).

CONCLUSION

The horticultural transformation during the Dogra period (1846–1947) in Jammu and Kashmir highlights the dynamic interplay between colonial interventions and indigenous agricultural evolution. The establishment of a dedicated Horticulture Department, the introduction of European fruit varieties, and the adoption of scientific practices such as grafting and budding marked a pivotal shift in horticulture from a subsidiary activity to a commercially significant enterprise. These advancements not only bolstered the region's economy through enhanced fruit production and exports but also solidified horticulture as a defining element of Jammu and Kashmir's agricultural identity. Despite its success, this transformation faced significant challenges, including inadequate infrastructure, climatic constraints, and initial resistance to foreign methods. These obstacles were gradually mitigated through institutional support and the strategic infusion of European expertise. The economic gains, particularly from the export of high-value crops such as apples, walnuts, and almonds, played a crucial role in fostering regional prosperity.

Nonetheless, this historical analysis reveals the need for further research into the socio-environmental implications of these developments and the nuanced contributions of local farmers. Future studies should examine the post-independence trajectory of horticulture in the region and explore its potential for fostering sustainable agricultural practices.

REFERENCES:

1. A Handbook of Jammu and Kashmir State. (1947). Publicity Department, The Ranbir Government Press.
2. Annual administration report of Jammu and Kashmir State for 1912.
3. Annual administration report of Jammu and Kashmir State for 1914. (1915).
4. Annual administration report of Jammu and Kashmir State for 1936–37. (1938).
5. Annual administration report of Jammu and Kashmir State for 1937–38. (1939).
6. Annual administration report of Jammu and Kashmir State for 1938–39. (1940).
7. Annual administration report of Jammu and Kashmir State for 1939–1940. (1941).
8. Annual administration report of Jammu and Kashmir State for 1941–43. (1944).
9. Annual administration report of Jammu and Kashmir State for 1946. (1947).
10. Annual reports of the Horticulture and Vineyards Department, Kashmir for Year 1914. (1915).
11. Bamzai, P. N. K. (2007). Socio-economic history of Kashmir 1846–1925. Gulshan Books.
12. Bamzai, P. N. K. (2008). A history of Kashmir: Political, social, cultural from the earliest times to the present day. Gulshan Books.
13. Foreign External-B July 1889, Nos. 85/94. Indian National Archives.
14. Kalhana. (1900). Rajatarangini: Volume II (M. A. Stein, Trans.). Archibald Constable & Company Ltd.
15. Keenan, B. (1989). Travels in Kashmir: A popular history of its people, places, and crafts. Oxford University Press.
16. Lawrence, W. (1895). The valley of Kashmir. Oxford University Press.
17. Moorcroft, W. (1832). Notices of the natural productions and agriculture of Cashmere. Journal of the Royal Geographical Society of London, 2, 253.
18. Report on the administration of Jammu and Kashmir State for 1892–93. (1895).
19. Report on the administration of Jammu and Kashmir State for 1927–28. (1932).
20. Report on the administration of Jammu and Kashmir State for 1927–30. (1935).
21. Report on the administration of Jammu and Kashmir State for 1934–36. (1937).
22. Report on the administration of Jammu and Kashmir State for 1935–36. (1937).
23. The Triennial administration report of the Jammu and Kashmir State 1901–1904. (1908).