

CHAPTER IV
THE DEVELOPMENT OF AGRICULTURE

I

Since the early settlers were located at some distance from the towns and cities of importance, small experiments were conducted in the production of crops for subsistence purposes. These were limited, and were usually confined to areas where sub-irrigation was possible. Possibly the first person to demonstrate the fertility of the sagebrush lands in the Yakima country was N.T. Goodwin who cleared five acres in 1867 and seeded it to wheat. That fall he is said to have harvested a crop averaging forty bushels to the acre. Other similar experiments gave evidence that the sagebrush lands were fertile enough to be valuable for agricultural purposes if they could be watered. Fruit raising which is today such an important phase of the agriculture of the valley also received some attention during the early period of settlement, and although the first attempts were ridiculed by the stockmen who scoffed at the idea of raising trees in a desert, they lived to see the error in their reasoning. Alfred Henson is reported to have planted an orchard on the bottom lands in 1866 which began bearing when the trees were nine years old. N.T. Goodwin who had a homestead near the present Moxee bridge stated that he set out an orchard of one hundred fifty trees in 1868, but he chose the land which lay

next to the river and the result was that the trees were washed away by the high water. In 1870 Judge John Wilson Beck set out fifty apple trees and the same number of peach trees on his homestead near Yakima City. It is doubtful, however, that these men thought much of the possible lucrative benefits of the fruit industry, as one finds the emphasis placed upon the general improvement which trees would give to the appearance of the valley, thus serving as a further inducement to settlement. Such a perishable product could not be very profitable unless there was an easily accessible market.¹

The condition of agriculture just described was generally true in 1880, and it can be quite safely stated that for the greater part of the next two decades farming in the Yakima Valley was on an experimental basis. Sweet potatoes, peanuts, sorghum and sugar cane, broom corn, tobacco and wine grapes were raised at some time during this period, and all reports which have been found indicate that they were produced with a considerable degree of success. All of them had, however, either entirely or almost entirely vanished from the list of the products of Yakima Valley in 1900. Garden vegetables, fruits and melons, cereals, potatoes, hops, sugar beets, and hay were becoming increasingly important, however. Some of the experiments with various crops attracted a great deal of attention and are deserving of special consideration.

1-Interstate Publishing Company, Illustrated History, 157; Yakima Record, July 17, 1880, July 22, 1882.

II

The experiment with tobacco seems to have been conducted solely by the Moxee Company which was organized about 1887 by the Hon. Gardiner Hubbard, President of the American Telegraph Company. The stock of the company was held largely by Mr. Hubbard and the Bell Telephone Company. (Mr. Hubbard was the father-in-law of Alexander Graham Bell.) Something over six thousand acres of land was purchased and William Ker was sent to manage the company's farm. The purpose of the organization was to conduct a model farm which would demonstrate what could be done by system and organization, and what a large percentage of profits could be realized from farming on an extensive scale by applying the principle of well organized labor. It was also the intention of the company to experiment with different kinds of crops in an effort to discover those which were the most profitable to produce in the Yakima Valley. To this end Mr. Ker reported in 1889 that he had under cultivation alfalfa, barley, tobacco, hops, oats, corn, garden truck and grapes.²

Until 1891 the raising of tobacco was the experiment in which the manager seems to have been most interested. He had been led to make this test by suggestion of Mr. Joseph Jorgensen who had at one time been a Congressman from Virginia

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Barton, "North Yakima," p. 20; S.G. Brock, Report of the Internal Commerce of the United States for the Year 1890 (51 Congress, 2 Session, House Executive Document no. 6, Vol. 24, part 2, serial 2854, Washington 1891), 1026. Yakima Herald April 18, 1889.

and had later had charge of the land office at Walla Walla. While serving in that position he had sent some samples of soil to the Smithsonian Institute which had reported that it was particularly adapted to the growth of tobacco. Mr. Ker planted the first crop in 1887 and was so pleased with the results that for several successive years the experiment continued with a considerable degree of success. The following description of the methods which were employed will show, however, that its production must have involved a great deal of expense and capital outlay--much more than the average farmer could afford;

The plants are raised in beds and transplanted..

The tobacco field should be prepared by careful cultivation, and should be thoroughly irrigated. The plants may be put out when they are from two to three inches high.

Till the plants take root and begin to grow they should be well watered, but afterward very little water and constant cultivation are required.

...After the plants have budded and before they blossom they are "topped", leaving not more than twelve leaves on the stalk, the "suckers" are then removed constantly. ...

When ripe the leaf will be mottled with light spots and will be quite brittle in the cool of the day. It is then cut and left in the sun till it is thoroughly wilted, then strung on a lath (six to eight plants on each lath), and hung in the curing-house. ...

Our climate in eastern Washington is so dry that artificial moisture is required in curing. This may be partially supplied by flooding the ground which forms the floor of the curing-shed, but we have found it necessary to supplement this by steam. A vat is placed outside with a steam-pipe running into the shed. The latter is closed up and filled with steam, under the action of which the tobacco rapidly becomes soft and pliable.

...After the plants become moist, the house is gradually ventilated until they become dry. This is repeated until the tobacco is thoroughly cured, which should be about the first of February. It is taken down (while moist), stripped from the

stalk, sorted into grades, and packed into cases containing usually about 300 pounds each, in which it goes through the sweat which prepares it for the manufacturer. ...³

To further test the possible value of tobacco as a staple of the Yakima Valley, Mr. Ker had some of his first crop made into cigars which he sent to "friends in the East, and men who were in the habit of smoking 25-cent cigars sent word---- that they fully equaled the imported article." Local "connoisseurs" also were enthusiastic about the product, and in 1889 the Moxee Company established a cigar factory which supplied the local market. According to the reports of the manager, the crop yielded from eight hundred to one thousand pounds of tobacco per acre which was worth in 1890 (in the form of manufactured cigars) one dollar per pound. Statements were made regarding profits which were expected, but no mention was made of the estimated cost of producing the product, so it ~~was~~ not possible to determine what its net value per acre was.⁴

After 1890, however, reference to the importance of the tobacco industry disappeared. The advertisement for the "Yakima Cigar" which was carried by the Yakima Herald throughout most of the year, no longer appeared; and neither did the usual local items which kept one posted regarding the developments of the industry. Possibly the manager began to figure

³ Moore, "Report of the Governor," 1889, p. 329. This description was sent to the governor by Mr. Ker.

⁴ Brock Report of Internal Commerce, 1026; Moore, "Report of the Governor," 1889, p. 529; Yakima Herald, February 6, March 14, 21, April 18, October 17, December 19, 1889, March 6, 20, June 26, July 24, 1890.

production costs realized that the product was not as valuable as he had at one time thought; or it may be that his newly developed interest in hop raising pushed tobacco into the background; or it is possible that some disease or pest appeared and discouraged further production. Whatever was the cause for its decline, it proved to be only an experiment which had an interesting history.

III

The raising of hops was among the earliest of the agricultural pursuits of the Yakima valley. Before the advent of the railroad it was the only crop which it was profitable to raise for export purposes as the yield per acre was so high and the prices were so good that fair profits could be realized in spite of the high transportation rates. Probably hops were first raised in the valley about 1877. In 1879 the production was over 57,000 pounds. The Yakima Valley had a peculiar advantage for raising this product in the climate which was both very warm and very dry, and the hop louse was unable to survive. Although it frequently made its appearance in the yards of the Yakima farmers one cannot find any evidence that it did any serious damage. The soil was also well adapted to the raising of hops and the product seems to have been of an unusually fine quality. It did, however, require a great deal of work to get a yard ready for production purposes, so the increase in hop acreage in the Yakima Valley was only moderate during the 1880's--it was in fact much less than in the state

as a whole. The soil required careful preparation; the crop had to be started from roots rather than seeds, and the vines had to be trained either to poles or to trellises as they grew. Once a yard was established it was comparatively easy to continue the raising of the crop as the plant was a perennial and required only cultivation, fertilization and watering thereafter. In 1885, the Governor of the Territory stated that the average yield per acre (for the whole territory) during the preceding twelve years had been 1,600 pounds while the average price per pound during the same period had been eighteen cents. Since the cost of production seems to have averaged about seven or eight cents per pound, the margin of per acre profit was good as long as figures such as those stated above were prevailing. The cost of production did not, however, include the original investment or the interest on it.

By 1890, hops promised to become one of the most important products in the valley, and as the population increased, more and more yards were established. Prices that season were quoted in the early summer at thirteen cents per pound, a figure at which some of the early contracts were made. By the

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It was common for hop buyers to come into the valley early in the summer, or perhaps in the spring, and make contracts with the farmers for their entire crop, or for as much as the farmers would agree to sell at a contract price. If such a contract was made the farmer was advanced a part of the money to pay for having his crop harvested. Prices which were offered under such contracts were usually several cents lower than the prevailing price, as the contractor felt that he was taking a risk. Farmers who were not in need of the "advance" which was paid, generally preferred to wait until the crop was being picked before they made contracts for its sale.

first of August buyers were offering twenty cents; by the first part of September, thirty-two cents, and it was predicted that forty cents would be paid before the season was over. On October 2, the Herald reported that the market was "slightly off," and that only thirty-twocents were being paid. Pickers were scarce during that year, and some of the farmers were forced to raise the price paid to the workers from one dollar per box (of one hundred pounds) to one dollar and twenty-five cents. The excellent prices stimulated the desire to raise hops and in 1891 the amount of land in the valley devoted to that crop was reported as four hundred thirty-five acres, but the prices were a great deal lower than they had been the year before. Apparently it was considered only a temporary decline, however, for it was estimated that the acreage devoted to hops in 1892 was three times greater than it had been in the preceding year.⁶

In July, 1891, the Yakima Hop Growers' Association was organized to promote the best interests of hop producers in the valley. Management of the association was in the hands of an executive committee whose duties were to regulate the size and

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 Ralph, "Washington, the Evergreen State," 599; Semple, "Report of the Governor," 1887, p. 940; (C.A. Tonneson, Ed.) First Biennial Report of the State Board of Horticulture of the State of Washington for the Years 1891-92 (Olympia, 1893), 269, 273; United States Department of the Interior, Census Office, Report on the Statistics of Agriculture in the United States at the Eleventh Census, 1890 (Washington, 1895) 73; A.B. Wyck-off, "Irrigation; with an Example of its Application in the Arid Regions of Western America," in the Journal of the Franklin Institute of the State of Pennsylvania, 140; 261 (October 1895); Yakima Herald, June 11, September 19, 1890, July 17, August 7, 14, 21, September 11, October 2, 1890; July 9, September 10, 24, 1891; Yakima Record, September 4, December 18, 1880.

style of picking boxes; to establish the price to be paid to pickers by all members of the association; to ascertain the number of pickers which would be required and lend its services toward securing the required number; to obtain the best quotations possible for hop growers' supplies; to obtain and publish twice a month , reports concerning crop prospects and prices; and to secure information regarding the habits and control of the hop louse in various localities where it was found. The organization seems to have done a good work, particularly with regard to making arrangements for securing the required number of pickers. In 1890 agents from the Puyallup Valley had persuaded a number of the Indians from the Yakima reservation to pick hops for the farmers west of the Cascades. To forestall the scarcity which might result from such activities, the Yakima Hop Growers' Association sent agents and circular letters to various places throughout the state to persuade persons who might be interested in picking hops to come to Yakima. Indians commonly did this work so contacts were made with all of the reservations in eastern Washington and in 1894 the first Indian Jubilee was held as an added inducement. The "Jubilee" consisted of a barbecue and three days of horse racing for Indian participants only. During the first year at least, all hop pickers were admitted free, and good purses were provided for the races. The celebration was held immediately following the State Fair, and the same practice was followed in 1895.

In 1896 the prices of hops were so low and unemployment in the cities so general that the work of the Association was neg-

ligible, but from 1897 to the end of the decade it again functioned quite regularly. Concerning the other duties which were assigned to the officials of the organization, little information is available. Special transportation rates were secured for pickers in groups of fifty if they came from the Puget Sound or Spokane regions, and it is very probable that special prices were obtained for supplies as the organizations would likely make its purchases in quantity lots. By 1899 there was a movement to extend the activities of the organization to include cooperation with others in the state, and to erect a warehouse to store the surplus of the product raised and to hold the crop for a better market.

The area of land which was planted with hops had increased to nearly 2,500 acres in 1893, and to about 3,250 acres in the following year. Between 1891 and 1893 the price remained at an average of about twenty cents per pound and the production per acre was very good--more than a ton having been reported in some cases. In 1894, however, the effects of the panic of 1893 began to be seen in the hop market. Quotations ranged between $12\frac{1}{2}$ and 19 cents in April; in June 10 to 12 cents was being offered; and by September the farmers were receiving only 7 to $7\frac{1}{2}$ cents. In the spring of 1895 there were hopes that better conditions would prevail when some contracts were made in March at 10 cents, a price which was still being offer--

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Yakima Herald, July 30, August 27, 1891, May 26, 1892,
 June 15, 1893, June 7, July 19, 26, August 2, 16, 23, 1894,
 August 15, September 5, 12, 1895, May 20, June 10, July 1,
 1897, August 3, 1898, November 2, 16, 1899.

ed in July; but when the harvesting of the crop began a decided decline took place. During September and October $5\frac{1}{2}$ to $6\frac{1}{2}$ cents was the best price which could be obtained, and in January, 1896, $3\frac{1}{2}$ cents was the maximum that was being offered for the 1895 crop. It was estimated that the cost of production that year would range between 6 and $7\frac{1}{2}$ cents per pound. For the remainder of the decade there was a slow recovery of the market, and buyers who realized that such was the case made contracts over three to five year periods, paying usually 6 cents for the 1896 crop, then gradually increasing the price to $7\frac{1}{2}$, 8, and 9 cents for the remaining years. Farmers who could not secure the money to finance the cost of raising hops from any other source were compelled either to abandon their yards entirely or to accept these offers. Others who were able to secure financial assistance elsewhere fared better, for the market prices in October, 1896, ranged between $7\frac{3}{4}$ and 9 cents, and during the remainder of the decade they gradually rose to 15 cents.

The depression taught the farmers of that generation that it was folly to depend primarily upon one crop as their source of income. The hop industry was still flourishing at the end of the nineteenth century, it is true, but the acreage had been reduced by about one third of what it had been in 1894, and one finds emphasis being placed upon the necessity for a diversified agriculture. The hops produced in 1899 in the Yakima Valley amounted to 2,913,700 pounds which made up 42.765 of the total production in the state. At the prices which prevailed

in that year the crop was worth between three and four hundred
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 thousand dollars.

IV

In 1934 the Yakima Valley produced approximately thirty-four per cent of the apples, forty-two per cent of the cherries, seventy-seven per cent of the grapes, seventy-one per cent of the peaches, sixty-eight percent of the pears, and twenty-nine per cent of the ~~plums~~⁹ and prunes which were raised in the state of Washington. These percentages represented about twenty-six millions of bushels of fruit, the product which can be said to have made the valley famous throughout the entire Northwest and in some other parts of the United States as well. Experiments in fruit raising in the last two decades of the nineteenth century had resulted in giving to the valley one of its principal commodities of commerce.

In 1879 the value of all orchard products sold or consumed in the Yakima and Kittitas valleys was \$5,526. This rep--

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Yakima Herald, July 30, August 27, 1892, April 26, June 28, August 9, September 6, 1894, March 14, April 18, 25, May 9, July 18, September 19, October 3, 1895, January 30, July 16, August 27, September 3, October 29, December 17, 1896, March 11, April 8, May 13, August 12, 26, September 2, 23, 30, October 21, 1897, June 16, September 15, 29, Oct 6, 1898; Appendix I, Table iii.

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U.S. Department of Commerce, Bureau of the Census, United States Census of Agriculture: 1935 (Washington, 1936) 2:920, 923. To obtain the figures on the entire Yakima Valley it was necessary to add together the figures for Yakima and Benton counties. The percentages which are here given are the results of the author's own calculations based upon the number of bushels of each of the items named.

resents a very small beginning for the fruit industry. During the following decade, however, there were some significant changes in the valley and these stimulated an interest in setting out orchards. Among them were the railroad transportation facilities which connected Yakima Valley with Puget Sound, and the development of a number of irrigation projects. The increase in fruit production in 1889 was not unusually large, but it shows that there was a considerable development taking place in the raising of that product. (It must be remembered that fruit trees do not begin bearing until several years after they have been set out.) In 1889 the total quantity of apples, cherries, grapes, peaches, pears, plums, and prunes which was produced in the Yakima Valley amounted to about 12,000 bushels. Since this figure did not include all orchard products such as berries, one can conclude that it represented a substantial increase over the production ten years earlier, but the difference in units of measure makes it impossible to form any accurate comparison. It was reported in 1890 that although the fruit industry was still "in its infancy" its products were being shipped to Tacoma, Seattle and other cities on Puget Sound. Frequent reference was made to the fact that the number and size of orchards was increasing; and trees were purchased in quantities varying in number from a few hundred to several thousand. In making a report to the State Board of Horticulture, M.B. Curtis wrote in 1892 that the fruit industry was destined to become the leading one in the valley, and there was no fruit which he had tried to raise

that did not grow to perfection. Apples soon became a favorite among fruit producers partly because of their keeping qualities which made it unnecessary to market them immediately. Next in importance were plums and prunes, with peaches taking third place among the larger fruits. Considerable attention was also given to grapes, strawberries, raspberries, blackberries, currants and gooseberries. Exports of fruit in increasingly large quantities became a regular phase of the industry from 1890. In 1896 it was reported by the state ^DBureau of Statistics, ^AAgriculture and Immigration, that Yakima ^County had about 5,000 acres planted with different kinds of fruit trees, and that 30 carloads of the product had been exported during the preceding year. By that time the horticulturists of the valley were not depending solely on the Puget Sound markets, for reports indicate that shipments were also being made to eastern cities.

The fruit industry apparently did not suffer from the effects of the panic of 1893 in anywhere near the same degree as did the hop industry. There is some indication that the demand decreased somewhat, but the prices remained fairly good, and the decline in demand was at least partially offset by establishing a cannery and a number of evaporators which used the surplus product. The horticulturists was not without his difficulties however. Occasionally an unusually severe winter killed or damaged a number of his trees, while a late frost in the spring might be responsible for considerable loss to a single year's crop. The various insect pests and tree diseases gave him the greatest trouble, however, and in an effort to con-

trol them he turned for aid to the state.

An act of the legislature in 1891 established a State board of Horticulture consisting of seven members who represented six horticultural districts into which the state was divided. The law ~~was~~ amended in 1895, in 1897 and in 1899 in an effort to establish complete control over insect pests and plant diseases. The Board of Horticulture was given power to establish regulations for the purpose of "preventing the spread of contagious diseases among fruit and fruit trees, and for the prevention, treatment, cure and extirpation of fruit pests and the diseases of fruit and fruit trees, and for the disinfection of grafts, scions, or debris, empty fruit boxes or packages, and other suspected material or transportable articles dangerous to orchards, fruit and fruit trees." It was required to provide for the inspection of orchards, to see that the regulations were observed, and to institute proceedings against persons who refused to heed the instructions of the inspectors regarding the disinfecting or destroying of "diseased trees" or nursery of trees, or a fruit packinghouse, store room, sales room, or any other place in this state infected with any noxious insects, or the eggs or larvae of any such insects." Failure to comply with the regulations of the board was made a

10 Brock, Report of Internal Commerce, 1037; Price, First Annual Report of the Bureau of Statistics, 1896, p. 86. Tonneson, First Report of the Board of Horticulture, 117, 138, 141, 143, 161, 162; Yakima Herald, March 13, 27, August 14, November 27, 1890; May 7, 1891, February 23, April 27, August 31, 1893, April 5, August 2, 23, September 5, 12, November 1, 1894, October 3, November 7, 1895, April 16, May 7, September 3, October 15, 1896, February 23, March 11, 18, May 27, 1897

misdemeanor punishable with a fine of not less than twenty-five dollars nor more than one hundred dollars, except that if "the party convicted shall thereafter neglect or refuse to disinfect said premises or property, said failure, neglect or refusal for the period of five days shall be deemed a new offense and shall subject the party committing it to conviction in like manner and with like penalty and costs as in the first offense,"

An important change was made in the law in 1897 when the Board of Horticulture was replaced by a Commissioner of Horticulture who was given rather broad regulatory and supervisory powers over the industry. Complaint had been made that the earlier system of dividing the state into districts had placed too much of a burden upon the inspectors with the result that their work had not been as carefully done as it should have been.

The amended law made provision for county fruit inspectors to be appointed by the county commissioners upon nomination by the county horticultural society if such an organization existed; or, if the county commissioners failed in this duty, the commissioner of horticulture had the power to make the appointment. The duties of the county inspectors were similar to the earlier duties of the Board of Horticulture, but they were invested also with the power of entering the premises and disinfecting the same if the owner refused or neglected to do so.¹¹ Reports from some of the inspectors indicate that the Yakima Valley had its share of fruit diseases and pests, and that

the fruit raisers had to be very vigilant in their efforts to prevent their destroying the orchards.

The horticulturists realized quite early the need for co-operation to solve their problems and to benefit from their mutual experiences. In June , 1892, the Washington Horticultural Society was organized in North Yakima for the purpose of advancing the "art and science of horticulture, including the consideration of all profitable interests therein." Charter members of that organization numbered thirty, and included representatives from all of the fruit sections of the state.¹²

In September, 1893, a suggestion for cooperative enterprise was made by A.E. Snelling. It grew out of the decreasing demand for fruit products that year. His plan was to erect a building to which the farmers of the valley could bring their surplus fruits for storage and curing. Evaporators were to be installed and possibly a small cannery which would utilize the products of a perishable nature and store them for a future market. The work was to be done, in so far as it was practical to do so, by members of the families who belonged to the cooperative. A superintendent would be elected who would be responsible for the operation of the plant, and would be charged with

Ibid: 1895, p. 89, 92; Ibid., 1897 p. 308-313; Ibid., 1899, p. 246; Tonneson, First Report of the Board of Horticulture, State Board 49 (C.A. Tonneson Ed), Second Biennial Report of the State Board of Horticulture of the State of Washington for the Years 1893-94 (Olympia, 1895) 35, 36; Yakima Herald May 2, 1895, March 1, 1898.

¹² Tonneson, First Report of the Board of Horticulture, 290; Yakima Herald, June 9, 1892

finding suitable markets. Apparently the plan did not materialize
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 beyond the point of ~~erecting~~ considerable discussion.

In January, 1894, the Yakima County Horticultural Society was organized to cooperate with the State Board of Horticulture in eradicating fruit pests, and to aid in the marketing of the products of the valley. A committee was appointed at the second meeting to establish a central headquarters for the distribution of spraying materials, and a general discussion about topics of interest to fruit raisers took place. In May of the same year the Yakima Shipping association was incorporated by members of the county horticultural society. It was capitalized at \$100,000 which was divided into shares of \$5 each. Its objects were "to promote the interests of growers of fruits and other farm productions(sic) by cooperation in shipping; collecting and disseminating information bearing upon the preparation and marketing of said products; establishing uniformity in grading and packing and in extending and developing markets; to purchase and sell supplies used in raising, preparing and marketing of said products;...and to receive, store and market for (the) account of owners, fruits and other products intrusted to the cooperation." No further reference was found regarding the activities of this association save for a single plea urging every market gardener and every grower of fruit
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 to become a stockholder.

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¹³ Yakima Herald, September 14, 1893

¹⁴ Ibid., January 26 February 1, 15, May 10, June 28, 1894.

Besides supporting the local organizations, the Yakima fruit growers also cooperated with the Northwest Fruit Growers' Association which tried to form a rather close alliance among all fruit growers of the Northwest as well as to advertise the products of that section of the county and to secure favorable markets and transportation rates.

In 1900 it could no longer be said that the fruit industry was of minor importance to the Yakima Valley. The production of apples, cherries, peaches, pears, apricots, plums, and prunes amounted to about 320,000 bushels in 1899. That amount was approximately twenty-five times as much as it had been in 1889. More significant than the amount produced, however, was the fact that the Yakima Valley was producing between twelve and fifteen per cent of the total amount of the large fruits raised in the state.

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V

Numerous other experiments were conducted by the farmers of the Yakima Valley between 1880 and 1900 in their efforts to learn what crops were best suited to the region and which ones were the most profitable to raise. They did not receive as much publicity as those which have been discussed, but some of them proved to be as important. Garden vegetables were raised in many varieties and in large quantities. Particularly important for commercial purposes were potatoes. In 1889, twen-

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Appendix I, Table iv.

ty-seven carloads of that product were shipped from North Yakima; by 1891 its export had increased to ninety-two carloads; and between July 1, 1894 and July 1, 1895, shipments of potatoes amounted to one hundred seventy-five carloads. That was not the entire amount exported from the valley at there were several other shipments points besides the one at North Yakima. By 1895 many of the shipments weremade to eastern cities.

Onions also proved to be a suitable crop for the Yakima Valley. In 1891 a farmer by the name of Simpson had twelve acres planted with that vegetable, and he estimated that the yield would be 1,000 bushels to the acre. The exports were in much smaller quantities than were the shipments of potatoes, but of course the human population does not consume onions in the same quantities.

Watermelons found aready market and were a very important crop as early as 1890. The Herald reported that over one hundred carloads were shipped from North Yakima during that year. In 1891 a commission firm at Tacoma contracted for one hundred fifty carloads of Yakima watermelons at one dollar per dozen. That represented a value of approximately \$15,000, as the average carload consisted of about one hundred dozen melons.

Tomatoes did not do well in the Yakima Valley during that period as they were usually susceptible to the tomato blight.

Sweet potatoes were raised with good results but apparently never were cultivated to any great extent in the Yakima Valley. The Secretary of State reported in 1894 that they were

produced with good results but he made no mention of the quantity. In the Kittitas Valley, however, it was reported that several carloads of sweet potatoes were raised and shipped from the valley in 1895. Census reports for 1900 did not list any of that product in either Yakima or Kittitas counties, so it seems evident that there was no sustained interest in that particular crop.¹⁶

Experiments with the raising of sugar beets began about 1889. One of the first men to work at this on a scientific basis was Judge J.M. Stout who made a careful analysis of the soil in which he planted the seed, kept an accurate record of the quantity of beets harvested, made notations regarding the weather conditions under which the crop was produced, and had samples of the product analyzed by government chemists in Washington, D.C. The analysis showed that the beets contained 15.8% sugar in a juice which was 90.2 % pure. In 1893 several experiments were made under the direction of the U.S. Department of Agriculture, and the average results of the analysis of these experiments showed that the beets produced in Yakima County contained 13.8% of sugar with a purity of 80.1%. Factory requirements specified that if the manufacture of sugar from beets was to be profitable, they must contain 12% sugar in ju

¹⁶ Price, First Annual Report of the Bureau of Statistics, 1896, p. 151; J.H. Price (comp.), The State of Washington; an Official Report of the Resources of the State up to and including January 1, 1894 (Olympia, 1894) 71; Interstate Publishing Company, Illustrated History, 185; Yakima Herald, February 21, 1889, August 21, 28, September 25, 1890, July 9, August 20, 1891, August 18, 1892, March 28, April 25, 1895, June 11, 1896.

which is 805 pure¹⁷. Judging from the results of scientific experiments it was evident that the production of sugar beets should be a worthwhile industry. Not much was done toward developing the culture of that product, however, before the end of the nineteenth century. In 1897 the Yakima Investment company planted half an acre with the product, and in 1899 D.C. Corbin, a Spokane capitalist offered to furnish seed free to any farmers in the Yakima valley who would plant and cultivate sugar beets and sell the product to a factory which the Washington Sugar Beet company was establishing at Waverly, Washington. The company reserved the right to send an expert agent with the seed and with drills to do the planting and to inspect the crop at any time during the season, charging this to the farmer at the rate of three dollars per acre. A price of four dollars per ton was guaranteed for all beets which contained between twelve and fourteen per cent sugar, and one-third of a dollar more per ton for all that contained over that percentage.¹⁸ A number of persons took advantage of that offer, and it may have been the real beginning of the beet sugar industry in the Yakima valley, for Mr. Corbin was also reported to have said that he would establish a factory at a location convenient for the Yakima farmers if they showed enough interest in the enterprise to make the undertaking pay.

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¹⁷ The Herald reported that in the results of this experiment the samples from Yakima "rated highest showing a purity of 90.2" This was doubtless the result of a single experiment rather than the average of all of them in the county.

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¹⁸ Price, First annual Report of the Bureau of Statistics,

Cereals were among the first of the agricultural crops to be raised in the Yakima Valley and they continued to be produced after 1880, although their relative importance showed a marked decline. Census reports show an increase in acreage and in the number of bushels produced, but this cannot be entirely assigned to the Yakima Valley proper as much of the grain of the county is raised in the Yakima Indian reservation. Certainly after 1890 the land of the valley was considered too valuable to be planted with small grains, unless it lay in a location which could not be irrigated. It was predicted, however, that maize which required irrigation to produce a crop would always be important because there were so few places west of the Rocky Mountains where it could be brought to maturity. One may be inclined to doubt the veracity of the stories of corn stalks which contained as high as 16 ears of corn, but they at least indicated that the product could be successfully raised. Although it did not occupy an important place among the list of products in the valley in 1900, it has subsequently¹⁹ become more important.

Hay was another of the older crops which the valley produced. The cattlemen frequently cut the wild meadow grasses for feeding their stock during the winter, but as the range became overstocked the sources of wild hay were depleted. One of

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1896, pp. 45, 49; Yakima Herald, February 14, 1889, December 21, 1893, May 20, 1897, April 6, 20, May 18, 1899.

¹⁹Appendix I, Table ii; "Washington Irrigation Company, Sunnyside Canal," section containing letters from farmers; Wyckoff, "Irrigation," 260; Yakima Record, September 11, 1880.

the first crops to be raised, however, when irrigation was begun, was alfalfa which grew abundantly and furnished the farmer with from three to five crops per season. The Moxee Company adopted it as one of the chief products of its farm, and in 1890 the amount of land which it had planted with that product was two hundred fifty acres. ²⁰ Between 1890 and 1900 the amount of hay produced in the valley increased about 44% and amounted in 1899 to more than 83,000 tons. It was reported that at least two-thirds of that amount was exported. It consisted of timothy and clover as well as alfalfa.

There were other products which were given a trial by the farmers of the Yakima valley, but which did not survive. In 1889, 14,000 pounds of broom corn were reported among the list of products, an equal amount which represented almost 64% of that produced in the entire state. There was some produced as late as 1895, but none was reported in 1899.

Sugar cane was raised as an experiment in 1879 by Robert Dunn who made forty-two gallons of heavy syrup from the juice which he had extracted. He treated the syrup with chemicals and succeeded in crystalizing the sugar although he did not attempt to extract it. In 1882 and 1883 similar experiments were made in the Naches valley, although there was apparently no effort to produce sugar. The syrup, however, was acclaimed superior to that which was imported. In 1895 reference was made

²⁰ Appendix I, Table iii: Interstate Publishing Company, Illustrated History, 270; "Washington Irrigation Company, Sunnyside Canal, section containing letters from farmers; Yakima Herald, May 22, 1890, May 5, 1892.

to the fact that aman by the name of Simpson had made 1,500 gallons of choice molasses from cane which he had raised in the lower Yakima Valley. The same year the farmers in the vicinity of Prosser were reported, to have about fifty acres in cane which was producing an average of two hundred fifty gallons of molasses tothe acre.

Census reports for Yakima County indicate, however, that the industry was declining, For the official report for 1889 showed a production of seven hundred fifty gallons of molasses, but that had degreased to one hundred ninety-eight gallons in 1899.²¹

In February, 1890, the manager of the Moxee company released the statement that he was going to experiment with raising tea that year and in August of the same year he ann unced that he had received a letter from a cotton broker in New York who had offered to furnish him with seed and give him every assistance necessary to make an experiment in raising cotton. Mr. Ker declined the offer because he had too many other things to do, but urged that someone else in the valley accept it. Since there was no other reference made to either of these propositions it is doubtful that they materialized.²²

The production of honey was certain to become important in the Yakima Valley as long as the fruit industry was thriving, for the bees were absolutely essential for the cross-pollination of the fruit blssoms. In 1891 the Herald reported that

²¹
Yakima Herald, March 7, April 18, September 12, October 3, 1895; Yakima Record, October 30, 1880, May 26, 1883.

²²
Yakima Herald, February 27, August 28, 1890

Charles Lee had sixty-nine swarms of bees which were producing a very good quantity of honey. In 1897 there were about 2,000 colonies of bees throughout the extent of the various valleys. Census reports listed the amount of honey produced in 1889 as 679 pounds, an amount that had increased to 105,000 pounds²³ in 1900.

As a result of the numerous experiments which had been made the general pattern of agricultural products for the Yakima valley had been fairly well established by 1900. Fruits, vegetables, hay and hops were recognized as the most important products of the soil although cereals were still produced in considerable quantities where other crops were not more profitable. The successful cultivation of these products was dependant, however, upon the irrigation of the soil.

²³ Appendix I, Table iii: Yakima Herald August 20, 1891, May 27, 1897.