# ESTIMATES OF CROP LOSSES FROM DISEASES IN THE LOWER FRASER VALLEY OF BRITISH COLUMBIA, 1966[1]

H.N.W. Toms[2]

Favorable conditions for the build-up of diseases were not present in the lower Fraser Valley in 1966, and there was a low incidence of foliar diseases such as blights, molds, rusts, and mildews.

Percentages of crop losses (Table 1) are based on a combination of field observations and estimates of the value of produce down-graded or rejected by processors and the local vegetable marketing board. A summary of acreages and estimated losses for each crop for 1965 and 1966 is given in Table 2. Values are based on the price received by the farmer. Although the loss figures for the 1966 potato crop are 50% higher than those for 1965, they do not imply an increase in disease incidence but are rather a more accurate estimate of total loss.

1966 was notable for increased production of small fruits from recent plantings, but the rise in strawberry acreage to 1250 acres from 300 in 1965 is deceptive. The lower acreage in 1965 was caused by the heavy losses that resulted from an unexpected freeze in mid-December 1964, before the plants had hardened off. A large acreage was killed and had to be replanted. The replants came into bearing in 1966. Fortunately, little loss occurred with raspberry plantings in the same freeze. The increased fruit loss in raspberry in 1966 was due to a heavy attack by gray mold under favorable weather conditions at the time of fruit maturity. The apparent decrease in cranberry acreage is the result of listing the acreage of bearing plants rather than total plantings.

Vegetable acreage and production in 1966 were about the same as in 1965. The general background for horticultural crops in this area was given previously in some detail (1). In that report it was stated that "since the war there has been a noticeable decrease in local vegetable production on the periphery of the metropolitan area owing both to the rising cost of land and to the conversion of farm and market garden land to residential and industrial uses." This statement applies only to the outskirts of Vancouver. In rural districts there has been a considerable increase in vegetable acreage since 1950.

## Acknowledgments

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## Literature cited

1. Toms, H.N. W. 1966. Estimates of crop losses from diseases in the lower Fraser valley of British Columbia, 1965. Can. Plant Dis. Surv. 46: 112-114.

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1 Contribution No. 140, Research Station, Canada Department of Agriculture, Vancouver, British Columbia.

2 Plant Pathologist.

Table 1. Estimated losses due to disease in vegetable and fruit crops in the lower Fraser Valley of British Columbia in 1966

| Crop and disease | Acres planted | Crop value* (thousands of dollars) | Estimated loss (% of value) | Estimated loss (thousands of dollars) |
|---|---|---|---|---|
| VEGETABLES | | | | |
| BEANS - Includes processing | 1,755 | $699.0 | | |
| Gray mold (Botrytis cinerea) | | | 5 | $34.9 |
| Root rots (Sclerotinia etc.) | | | 5 | 34.9 |
| Boron deficiency | | | 2 | 13.9 |
| BROCCOLI - Includes processing | 278 | 165.1 | | |
| Bacterial soft rot (Erwinia carotovora) | | | 2 | 3.3 |
| Downy mildew (Peronospora parasitica) | | | 2 | 3.3 |
| Clubroot (Plasmodiophora brassicae) | | | 8 | 13.2 |
| Boron deficiency | | | 1 | 1.6 |
| BRUSSELS SPROUTS - Includes processing | 140 | 93.3 | | |
| Bacterial soft rot (Erwinia carotovora) | | | 15 | 14.0 |
| Downy mildew (Peronospora parasitica) | | | 2 | 1.8 |
| Clubroot (Plasmodiophora brassicae) | | | 2 | 1.8 |
| Boron deficiency | | | 3 | 2.8 |
| CABBAGE | 426 | 273.5 | | |
| Clubroot (Plasmodiophora brassicae) | | | 3 | 8.2 |
| CAULIFLOWER - Includes processsing | 414 | 240.2 | | |
| Bacterial curd rot (Erwinia carotovora) | | | 2 | 4.8 |
| Downy mildew (Peronospora parasitica) | | | 2 | 4.8 |
| Clubroot (Plasmodiophora brassicae) | | | 5 | 12.0 |
| Boron deficiency | | | 2 | 4.8 |
| Seedling troubles (Rhizoctonia, etc.) | | | 1 | 2.4 |
| CUCUMBERS | | | | |
| Field: | 313 | 98.6 | | |
| Root rot (Fusarium sp.) | | | 2 | 1.9 |
| Scab (Cladosporium cucumerinum) | | | 5 | 4.9 |
| Leaf spot (Alternaria cucumerina and A. tenuis) | | | 2 | 1.9 |
| Greenhouse: | | 204.0 | | |
| Wilts (Misc. soil fungi) | | | 10 | 20.4 |
| LETTUCE | | 391.1 | | |
| Spring crop | | | | |
| Sclerotinia rot, drop (Sclerotinia sclerotiorum) | 125 | | 15 | 16.3 |
| Summer crop | | | | |
| Bottom rot (Rhizoctonia complex) | 175 | | 10 | 15.2 |
| Late crop | | | | |
| Bacterial soft rot (Erwinia carotovora) | 150 | | 10 | 13.1 |

Table 1. (continued)

| Crop and disease | Acres planted | Crop value[1] (thousands of dollars) | Estimated loss (% of value) | Estimated loss (thousands of dollars) |
|---|---|---|---|---|
| ONIONS | | | | |
| Bunching: | 50 | 63.0 | | |
| Smut (Urocystis magica) | | | 1 | 0.6 |
| Downy mildew (Peronospora destructor) | | | 2 | 1.2 |
| Bulb crop | 120 | 180.3 | | |
| Neck rot (Botrytis spp.) | | | 15 | 27.0 |
| PEAS - Table and processing | 5,215 | 1,017.4 | | |
| Downy mildew (Peronospora viciae) | | | 1 | 10.0 |
| Root rot (Fusarium complex) | | | 8 | 81.4 |
| POTATOES | 5,000 | 1,443.0 | | |
| Black leg (Erwinia atroseptica) | | | 1 | 14.4 |
| Common scab (Streptomyces scabies) | | | | 1.5 |
| Pink rot (Phytophthora erythroseptica) and 'Late blight (P. infestans) | | | 6 | 86.6 |
| Bacterial soft rot (Erwinia carotovora) | | | 10 | 144.3 |
| Bacterial ring rot (Corynebacterium sepedonicum) | | | | 3.5 |
| Storage dry rots (Fusarium spp.) | | | 2 | 29.0 |
| Tuber net necrosis (Leafroll virus) | | | 4 | 33.7 |
| Misshapen tubers (Various causes) | | | 20 | 288.6 |
| SPINACH - Spring crop | 12 | 7.7 | | |
| Downy mildew (Peronospora farinosa) | | | 15 | 1.2 |
| SQUASH - Winter stored | 142 | 64.5 | | |
| Black rot (Mycosphaerella melonis) | | | 15 | 9.6 |
| TOMATOES | | | | |
| Field | 10 | 6.0 | | |
| Early and late blights | | | 20 | 1.2 |
| Blossom-end rot | | | 5 | 0.3 |
| Greenhouse | | 252.3 | | |
| Leaf mold (Cladosporium fulvum) | | | 5 | 12.6 |
| Tobacco mosaic virus | | | 10 | 25.2 |
| Verticillium wilt (V. dahliae) | | | 5 | 12.6 |
| TURNIPS AND RUTABAGAS | 107 | 71.5 | | |
| Boron deficiency | | | 2 | 1.4 |
| TREE FRUITS | | | | |
| ITALIAN PRUNE | 300 | 60.0 | | |
| Black knot (Apiosporina morbosa) | | | 20 | 12.0 |
| SMALL FRUITS | | | | |
| BLUEBERRY | | | | |
| Field | 1,400 | 807.1 | | |
| Cane canker (Godronia cassandrae) | | | 15 | 90.0 |
| Blossom blight and mummy berry (Monilinia vaccinii-corymbosi) | | | 15 | 90.0 |

Table 1 (Concluded)

| Crop and disease | Acres planted | Crop value* (thousands of dollars) | Estimated loss (% of value) | Estimated loss (thousands of dollars) |
|---|---|---|---|---|
| Nursery propagation beds | | | | |
| Twig and fruit rots (various causes) | | 40.0 | 25 | 10.0 |
| CRANBERRY | 450 | 287.5 | | |
| Cotton ball (Sclerotinia oxycocci) | | | trace | 0.1 |
| Fruit rots (various organisms) | | | 1 | 2.9 |
| RASPBERRY | 2, 000 | 2, 672. 0 | | |
| Fruit rot (Botrytis cinerea) | | | 20 | 534.4 |
| Root rots | | | 10 | 267. 2 |
| STRAWBERRY | 1, 250 | 2, 834. 0 | | |
| Fruit rot (Botrytis cinerea) | | | 5 | 141.7 |
| Red stele (Phytophthora fragariae) | | | 5 | 141.7 |
| Powdery mildew (Sphaerotheca macularis) | | | 2 | 56. 7 |
| Root rot complex | | | 3 | 85.0 |
| Estimated total losses | $2,454, 000 | | | |

* Based on price received by the farmer.

Table 2. Vegetable and fruit crop acreages and estimated losses from disease in the lower Fraser Valley of British Columbia in 1965 and 1966

| Crop | Acreage planted 1965 | Acreage planted 1966 | Estimated loss (thousands of dollars)* 1965 | Estimated loss (thousands of dollars)* 1966 |
|---|---|---|---|---|
| Beans | 1,777 | 1, 755 | 45 | 84 |
| Broccoli | 325 | 278 | 51 | 21 |
| Brussels sprouts | 160 | 140 | 39 | 20 |
| Cabbage | 400 | 426 | 8 | 8 |
| Cauliflower | 425 | 414 | 56 | 29 |
| Cucumbers''' | 315 | 313 | 43 | 29 |
| Lettuce | 450 | 450 | 39 | 45 |
| Onions | 195 | 170 | 31 | 29 |
| Peas | 5, 280 | 5, 215 | 59 | 92 |
| Potatoes | 5,000 | 5,000 | 398 | 602 |
| Spinach*** | 12 | 12 | 1 | 1 |
| Squash | 100 | 142 | 8 | 10 |
| Tomatoes''* | 15 | 10 | 43 | 52 |
| Turnips | 90 | 107 | 1 | 1 |
| Italian prune | 300 | 300 | 12 | 12 |
| Blueberry | 1, 300 | 1, 400 | 160 | 190 |
| Cranberry | 500 | 450 | 3 | 3 |
| Raspberry | 1, 700 | 2,000 | 264 | 802 |
| Strawberry | 300 | 1, 250 | 81 | 425 |
| Total | 18, 644 | 19, 832 | 1, 342 | 2,455 |

* Based on the price received by the farmer.

** Including greenhouse production, not expressed as acreage.

*** Only the spring planting was diseased.