

A NOTE ON THE USE OF POTATOES BY THE ARMY FOR  
THE PREVENTION OF SCURVY AT FORT LOOKOUT  
AND FORT RANDALL IN THE EIGHTEEN FIFTIES

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In recent nutrition programs the potato has been more or less neglected as a source of vitamin C. A compilation of data<sup>1</sup> on the vitamin content of vegetables gives a value of 28 mgm of ascorbic acid per 100 grams of potato and 27 mgm of ascorbic acid per 100 grams of tomatoes. Workers at the Maine Experiment Station<sup>2</sup> have reported that the ascorbic acid content of potatoes can be increased to 40 mgm per 100 grams by a two standard varieties of potatoes of that area. While looking for early references to selenium poisoning I found the following quotations on the value of potatoes for the treatment and prevention of scurvy:

**Sanitary Report—Fort Lookout<sup>3</sup>**

Assistant Surgeon, David L. Magruder; October, 1856

"The diet of the troops consists of the ordinary soldiers rations, with an occasional extra issue of molasses and dried fruit superadded, as a preventive of scorbutus. No fresh vegetable having been grown here this year, I have represented to the commanding officer the urgent necessity for sending to the settlements as early as possible for potatoes, or other fresh vegetables, for use during the coming winter. I believe it is his present intention to dispatch a train for the purpose early this month. Should it, however, have happened, by any accident, that no fresh vegetables be brought up this fall, I apprehend that it will be again my misfortune to witness another scorbutic epidemic before the return of vegetation in the spring."

**Sanitary Report—Fort Randall<sup>3</sup>**

Surgeon T. C. Madison; September, 1857

"The only disease about which we need feel the slightest apprehension is scorbutus; the chief disease from which troops have suffered from the commencement of the Sioux expedi-

tion up to the present time. During the last winter the whole command was more or less affected before we received the Irish potatoes, which had left St. Louis in the fall, and had to be deposited one hundred miles below, and afterward hauled up, frozen, in wagons, they did not reach us before the first week in January. As soon as the liberal issue was fairly commenced and the men compelled to eat them raw as well as cooked, their convalescence was most rapid and recovery complete. After the potatoes gave out the supply of which was not abundant, the disease showed a strong disposition to return. I then commenced with a wild artichoke—a most excellent antiscorbutic and substitute for the potato. They were edible from the first of April to the middle of May. They make a most palatable pickle. They were generally eaten raw with vinegar, sliced or grated. It and the raw potato should always be grated, when the mouths of the patients are tender, their gums ulcerated and bleed from the slightest touch. The artichoke are most abundant around here; the wild onion rather scarce compared with the vicinity of Lookout and Pierre. Later in the season the wild nettles made excellent greens, and were liberally consumed by both sick and well. During the whole of this time fresh beef and the ordinary commissary and antiscorbutics, such as lime-juice, pickles, dried fruit, and molasses, were being issued. I most positively assert that the above articles will not prevent much less cure in scurvy after its full development. Whether more liberal allowance would effect the desired object remains to be ascertained after an experience of more than 2 years in the treatment in scurvy and its complications, I am compelled to believe that the consumption of too much salt meat is the true cause. The disease was unknown to the Fur Company's men prior to our expedition. Since, however, their consumption of

<sup>1</sup>Nutritional charts, 11th edition, H. J. Heinz Co., Pittsburg, Pa. (1942).

<sup>2</sup>Varietal difference and inheritance of vitamins C and A in potatoes. Dove, W. Franklin, Elizabeth F. Murphy and Robert V. Akeley. Records of the Genetics Society of America. No. 11:72-73 (1942).

<sup>3</sup>Statistical Report on Sickness and Mortality in the army of the United States, Jan. 1855 to Jan. 1860, R. H. Coolidge, Washington, D. C., G. W. Bowman, 1860 (U. S.) Cong. 36th 1st Session Senate Ex. Doc. 52: 37-41, 1860.

salt provisions, procured from the commissary, they have been similarly affected with the soldiers. The Indians eat nothing save fresh game or buffalo meat, and put up for winter quantities of dried plums, buffalo berries, chock berries, etc.; hence their immunity. I believe that almost any new vegetable will cure scurvy, the new Irish potato (raw), cultivated onion, wild onion, artichoke, etc. I have not derived the slightest appreciable benefit of citric acid."

These statements show how important the potato may be as a source of vitamin C when other sources are not available.