

Bij het rooien bleek dat alle knollen, afkomstig van stammen, die in 1924 op wratziektevrij land groeiden, gezonde planten hadden voortgebracht. Dit was ook het geval met de knol, die afkomstig was van de plant, welke in 1924 gezond was, doch welke toen afstamde van een zieke knol. De stam echter, die in 1924 ontsproten was uit een zieke knol en die in dat jaar zelve ook was aangetast, heeft in 1925 zeven planten opgeleverd, waarvan vier aangetast bleken te zijn.

Tabel IV geeft dit duidelijker aan:

TABEL IV.

No. der knol	Ziektetoestand van de moederknol in 1924	Ziektetoestand van de plant in 1924	Ziektetoestand van de nakomelingen van de plant in 1924
1	gezond	gezond	10 planten gezond
2	„	„	7 „ „
3	„	„	11 „ „
4	„	„	10 „ „
5	„	„	11 „ „
6	„	„	3 „ „
7	ziek	„	10 „ „
8	„	ziek	4 planten ziek en 3 planten gezond.

Merkwaardig is het verschil bij de nakomelingen van no. 7 en no. 8. Terwijl no. 8 zich gedraagt als een knopmutant, die geheel andere eigenschappen ten opzichte van de wratziektevatbaarheid bezit, krijgt men bij no. 7 den indruk, dat de aantasting in 1923 aan toevallige omstandigheden is te wijten.

Een duidelijk inzicht in het optreden van aangetaste stammen bij Triumph is nog niet verkregen.

THE PRESENT STATE OF THE PROBLEM OF CONTROL OF WART DISEASE OF POTATOES

(SUMMARY OF THE PRECEDING PAPER).

The experiments of ROACH c.s. do again raise the question whether soil treatment with chemicals is a practical method for the control of potato wart disease. These experiments have a great importance as they show that the efficacy of any chemical

in controlling the disease depends to a great extent on the degree of intimate incorporation of the substance with the soil. Whether sulphur treatment has to be regarded already as a feasible method of control seems yet to be doubtful.

The cost of a sulphur treatment is rather high. Besides it is necessary to bring great quantities of lime upon the treated soil in the following year to prevent the bad effect of sulphur on the growth of most crops. In the case of a small number of rest-sporangia remaining healthy after a sulphur treatment, this last one has to be repeated after the cultivation of susceptible potatoes. A sulphur treatment therefore cannot have a great value unless all restsporangia are killed.

In the experiments of ROACH c.s. however, a complete eradication of the disease did not occur and there is no evidence that the small amount of disease in the treated plots was due to spores from elsewhere. And even from the absence of disease on treated plots one cannot conclude that all restsporangia are killed. This can also be a result of:

- a. poor growth of potato plants in a sulphur treated soil;
- b. inhibitory action of the great quantity of sulphur in the soil on the germination of the restsporangia.
- c. the killing of the zoöspores after the germination without a simultaneous killing of the restsporangia.

The evidence, that all restsporangia are eradicated can only be furnished by experiments in which susceptible potatoes are grown on a sulphur treated soil, which afterwards has been neutralized by lime.

Without underestimation of the importance of the experiments of ROACH c.s. it seems that the only practical method to control wart disease still exists in the cultivation of immune resistant potatoes.

As a consequence of the collaboration of the breeders of new varieties with the „Laboratory of Mycology and Potato-research” and with the „Plantenziektenkundige Dienst” a number of new potato varieties have been tested on the experimental station at Oostwold and several new immune varieties, as Triumph Energie, Bevelander, Alpha a.o. have been introduced and are now cultivated in Holland.

The question whether a variety, which is found to be immune from wart disease can produce infected plants, is not to be answered by a simple „no”.

The variety Triumph has been tested on the Potato testing station at Ormskirk in 1924 and 1925. In both years all plants remained healthy. In 1923 I found on the testing station at Oost-

would three infected plants of this variety amongst 1197 healthy ones. In 1924 four infected tubers of these diseased plants were set near healthy tubers of Triumph on infected soil. These four tubers produced plants, which showed to be indeed plants of the variety Triumph. Three of these plants were healthy in 1924, one was diseased. In 1925 healthy parts of tubers of the diseased plant were set near tubers of healthy hills on a intensively contaminated soil. All tubers of healthy plants produced healthy plants. Four of the tubers of the diseased plant produced diseased hills, while seven of them produced healthy plants.

Thus one plant of the immune variety Triumph has produced a diseased offspring in the years 1923, 1924 and 1925.

Perhaps this plant is to be regarded as a susceptible bud variation of an immune variety.

LITERATUUR.

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