

INSTITUUT VOOR PHYTOPATHOLOGIE

**LABORATORIUM VOOR BLOEMBOLLEN-
ONDERZOEK TE LISSE**

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No. 53

September 1935

**PLANT QUARANTINES
AND THE INTERNATIONAL COOPERATION
IN SCIENTIFIC RESEARCH**

Address before the Phytopathological section of the
VI International Botanical Congress at Amsterdam
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by

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DRUK: H. VEENMAN & ZONEN - WAGENINGEN

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The problem of Plant-quarantines is a very complex one, as in it the phytopathological questions about the spreading of plant-diseases and plant-parasites as well as the international exchange of agricultural and horticultural products are inseparably united.

As the international exchange of all commodities that is to say all international commerce is dependent on it, it is of such great importance for the economical relations between all nations all over the world, that its importance can hardly be overestimated.

The problem of plant-quarantines is therefore also a very delicate problem, because it is of vital interest for the international relations between the different countries.

The difference in interest, which sometimes seems to exist between different countries for the solution of this problem, is indeed only apparent. No country is yet to any extent, self-supporting and it is of great interest to all countries to come to a final and satisfactory solution of this problem.

The publications, which especially during the last 20 years have appeared on this subject, are numerous. There are those who consider each impediment to free import and export of any commodity as „a violation of a natural law that life on earth is only possible by an international exchange of all products”.

On the other hand there are people who expect too much from plantquarantines and *think that they may even give a solution of the phytopathological problems themselves.*

According to me these two extreme views are the chief cause of the difficulties and we can only come to a solution by proving that both these extreme views are untenable.

In the first place, however, we should be convinced that the necessity of finding a solution is of vital importance to all nations and that, as I mentioned before a difference of interest is only apparent.

In different publications and in the programs of different congresses the wish is expressed to recommend in the first place the study of the biological basis in order to come to a solution of the problem. This, however, shows a wrong notion of the problem as a whole, if it is thought that the so-called biological and economic sides may be separated.

This is a fundamentally wrong notion. The biologist who thinks he may neglect the economic side of his problem, will never be able to come to a complete solution and this especially holds good for the phytopathologist.

Nobody would dream of excluding the economic sides from the other problems which are discussed here. And at this international congress we certainly should dare to face the difficulties connected with international relations.

The problem of plant-quarantines has indeed many times already formed a subject for discussions at international scientific congresses.

Here in Holland it was discussed in 1923 at the International Conference of Phytopathology and economic Entomology at Wageningen and at the end of the discussions the following motion was unanimously carried:

„The representatives of all nations, assembled at the International Phytopathological Conference June 1923 desire to declare themselves in full agreement with the essentials of international trade and commerce in living plants and plants-products, namely, *reasonable* freedom from all insect-pests and plant diseases of all kind of materials imported into, or exported from any country.”

In 1926 the subject was put on the program of the 4th. International Botanical Congress at Ithaca, where Güssow among others gave a very important contribution and I spoke about international cooperation in Scientific research.

At the end of the discussions an international committee was instructed to study the biological basis of plant-quarantines more fully, and I was appointed chairman of this committee.

Because no permanent connexion exists between succeeding congresses, the subject of plant-quarantines was not included in the program of the 5th Congress at Cambridge in 1930, where not even a separate section for Phytopathology had been formed.

Because several colleagues at Cambridge pressed the matter, a separate phytopathological section has been formed here and

the committee of the Congress has promised moreover that the subject of plantquarantines will be discussed here.

The absence of a permanent connexion between succeeding Congresses, the difficulties caused by the economic crisis to keep in touch by repeated meetings, and also personal difficulties have made it impossible for me to give you a summarizing account of the committee formed at Ithaca in 1926.

Presently two members of this committee: Prof. APPEL and Dr. GÜSSOW will give you their views about this problem, and Dr. MC CUBBIN will also give a contribution for the discussions.

It is however a great pleasure to me to be able to draw your attention to a very circumstantial and thorough study of the problem of plantquarantines, published by the College of Agriculture of the University of California, Berkeley, as Bulletin no. 553 under the heading:

„The efficiency and economic effects of Plant-Quarantines in Californië“.

Many of you will no doubt have read this study with great appreciation, just as I have done.

Though the problem of the plant-quarantines has chiefly been considered here from the interest it has for Californië, I think all the same, that it is also of great importance for the international aspect of the problem as a whole.

I quote some of the conclusions of this study (page 41):

„The federal quarantine regulation that restricted imports of certain products into the United States altered prices of those products in practically all exporting and importing countries. To evaluate properly the effects of such a quarantine it would be necessary to consider the losses to producers and gains to consumers in all foreign countries, the gains to producers in this country, and the losses from higher prices and gains from healthier crops for export to consumers in this country. Perhaps the disadvantages to producers in Europe far outweigh the gains to people of the United States. But what can the producers in Europe do about it? They can cease to grow crops for export, stop buying prunes, raisins, other fruit products, automobiles, and anything else from the United States and produce their own products or get along without them. This would tend to be the ultimate result, without any legislation, because they cannot buy unless they have something to offer in exchange. However, they may hasten the change by enacting tariffs, quotas, embargoes, and other measures to restrict imports. Finally, producers of

export commodities in the United States are indirectly affected.

If the people of other countries are excluded from the concept of society and the effects of plant quarantines on them are not considered, then the analysis is unfair, and the people of this country are favored at the expense of foreigners. Likewise, if the effects on producers and consumers in other states are not considered, and „society” is limited to the people of California, that is again unfair, and even more so if only the effects of plant quarantines on the producers of agricultural crops in California are considered and the effects on other people in the State are ignored”.

Another quotation:

„Admitting that under certain conditions plant quarantines may prevent or delay the establishment of new pests or diseases, there is still the possibility that the general growth of the plant-quarantine policy now taking place throughout the United States and other parts of the world may become a serious problem for California, because this state is probably more dependent upon outside markets than is any other state in the Union. Serious restrictions on the distribution of farm products might conceivably become a more difficult problem for the California producer to meet than the control of new pest and diseases. If California should maintain unfair and unnecessary quarantines this would greatly increase the danger of restrictions against the products on the part of other states. The losses to the state may be just as great from retaliatory measures as from justifiable quarantines established against any major or minor pest. If new pests become established than the chances of quarantines regulations in other areas against California products are very great. It would be unwise for the state to abandon the principle of quarantine, because of the danger that diseases or pests would enter and other areas would then establish quarantines against California products. It is quite as unwise for the state to maintain any unnecessary or unimportant plant quarantines because they may produce similar results. For purely selfish reasons therefore, if for no other, it is essential that California quarantines be based on sound biological and economic principles and that they be fair to, and considerate of, the other states”.

This opinion is most important and gives a correct notion of the problem for all products and all nations.

I think that we shall be able to come to a satisfactory solution

of our problem, if we in this way show our will to understand each other's difficulties, and on the strength of my own experiences of the last 18 years as well as of many publications published during this time, I think we ought to premise the following points as a basis for our discussions:

Life on earth is only possible by an international exchange of commodities of all kinds. The violation of this natural law must disturb the economic balance of the world.

The prohibition of the exchange of the products of agriculture and horticulture will automatically also put an end to the exchange of the products of the industries.

The opponents of all plantquarantines may consider that these may serve a useful purpose if not by ultimately preventing, by delaying the spreading of a plant disease.

From this standpoint they can be advisable or acceptable when maintained within reasonable and economic limits.

A compromise must be found between the indispensable exchange of all commodities and the possibility of introduction of plantparasites.

„Exaggeration of the danger from pests and diseases is unnecessary and in the long run will weaken public support of plant-quarantines” (Bulletin 553).

Plant-quarantines never may be used for creating trade advantages.

„If the major usefulness of a quarantine has passed, or if it becomes evident, that it is no longer effective, it should be promptly rescinded.

If a state or country does not recognize this obligation, it cannot expect and rightfully demand fair treatment in this regard by other states and countries”. Bullet. 553.

An embargo *only* is justified as an emergency measure as long as it is founded on the principles just mentioned.

This implies that as soon as methods for combating any disease

are found or improved to such an extent that this cannot be considered to be of great danger for the home crops, the quarantine-restrictions have to be altered.

Above all however we phytopathologists have to keep in mind that any phytopathological problem can never be definitely solved by the most severe quarantine.

In the most favourable case we can only attain by it a shifting of the problem by delaying the spreading of the parasite to our own country.

If the circumstances of our own climate and our cultural conditions are such, that the parasite cannot become a danger with us, there is no reason for plantquarantine restrictions against it.

Are circumstances favourable for the spreading of the plant-disease, then we should learn to fight it and quarantine only gives a delay of the difficulties.

The American Phytopathological Society, the President of which we have the honour of seeing in our midst, has carried a motion to promote the sending abroad of their own phytopathologists that they may get acquainted beforehand with possibly imminent dangers.

This shows confidence in the will of cooperation of foreign colleagues without whose help they will certainly not be able to get on.

I am speaking here not as a phytopathologist for Dutch bulb-culture, but as a member of this international Congress. In the former function I have always held the view that we should come to a solution of phytopathological problems by international cooperation.

More than 500 foreigners have visited our institute these last 12 years and some have even been our guests for some months and never has anything been kept a secret from them.

Our methods of fighting diseases are also applied abroad with succes.

Every onesided national point of view is to be condemned from a biologic as well as an economic point of view; such an attitude causes us to expect the same frankness and cooperation abroad, and this will as a rule gladly be given as soon as it is resolved also to hear foreign colleagues before introducing restrictions of imports.

For the last time I quote Bull. 553 once more:

„*Insect pests and plant diseases often appear more serious to those who do not have them, than to those who do*” (Bull. 553, pag. 245).

Only when following this policy shall we be able to come to international cooperation, which is essential for the solution of many phytopathological problems, connected with the biological basis of plantquarantines e.g.: the problem of the biological strains of plant parasites; — the connexion between the international traffic, the exchange of plants and plant-products and the spreading of plantdiseases — the importance of many organisms as primary or secondary plant-diseases; — the influence of the climate on the appearance and the spreading of plant diseases; — and last not least: the origin of new plant diseases.

Every step taken towards a solution of any of the above mentioned problems, the possibility obtained of combating the plant diseases, will in the long run be more profitable for agriculture, forestry or horticulture of any nation all over the world, than attempts at preventing the spreading of the diseases by laws and boundaries which are entirely unnatural and artificial. *Even a complete standstill of the international exchange of all commodities cannot prevent this spreading in the end.*

If we realize, that the difficulties to come to an international agreement in the province of economy, have led to the world crisis, then we need not be surprised that the plantquarantine problem has also given rise to misunderstandings, by which the high ideal interests of Science often threatened to be endangered.

It is especially for this reason that, opening the discussions on this very important problem, I want to appeal to you most urgently to put yourself as much as possible on an international standpoint in all discussions on the subject of plantquarantines and in every phytopathological investigation connected with it.

Only in this way shall we be able to conquer the great difficulties connected with this problem and to uphold our Science.

Certainly it needs some courage looking nowadays at the international political and economic relations anymore to expect anything from international cooperation. Science is however by birth-right international and it is essential for the Scientist to be optimistically minded when searching for the truth. So we shall continue in having faith in the future.

It has already repeatedly been urged that there should be a closer connexion between the successive congresses.

If this should prove possible, our committee appointed at Ithaca in 1926 certainly will continue its work in order to attain to a more intensive cooperation for phytopathological research based on mutual appreciation and confidence, by which alone the problem of plant quarantines may be brought to a satisfactory solution.