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PROTECTION OF THE BREEDER'S WORK

by

Dr O. BANGA

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PROTECTION OF THE BREEDER'S WORK

by

Dr O. BANGA

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This is a report on a lecture given at the Congress of the „Association Internationale des Producteurs de l'Horticulture” (A. I. P. H.) in Vienna, September 5—9, 1951.

It will be published in German and French in the Congress Report of the A. I. P. H.

Without protection of the breeder's work no intensive improvement of varieties

Generally speaking, the success of a culture may for 50 % depend on the variety one has at one's disposal and for 50 % on the factors of the milieu being present by nature or created by man. Therefore it is essential for the agricultural and horticultural production that good varieties are available.

And how does the agricultural and horticultural industry get to those good varieties? By the work of the breeders, who set themselves to maintain the existing varieties by selection, to gradually improve them, if possible, or to create new varieties, which are more valuable than the old ones. This work of the breeder, therefore, is of the utmost importance for agriculture and horticulture and in addition for society in general. The populations of the various countries are increasing. The demands made upon quantity and quality of agricultural produce are getting higher and higher. There will never be a final stage to the demands made upon the varieties. Constant breeder's work is needed.

It is a pity, however, that the breeder in his struggle for existence generally has a weaker position than the man who simply increases other people's varieties, just as the inventor is no match for the manufacturer exploiting the inventions of somebody else. For the breeder and the inventor have to do a lot of work over a long period of time before they can get any compensation, and as soon as they disclose their variety or invention there are usually other people having more means and knowledge, necessary for commercially exploiting such things and, therefore, having better chances of gaining by it than the breeder or inventor himself. This rather weak position of breeders and inventors strongly reduces their disposition to occupying themselves with this sort of work. Therefore the patent-right has been instituted for industrial inventions. And therefore legislation work conducive for the protection of the breeder's work has been started.

By the patent-right on industrial inventions it became economically possible for the industry to establish research divisions applying themselves entirely to making inventions for the improvement of the industrial processes and products. In this way the protection of the breeder's work will have to render it possible that the systematic work of the breeder, more than hitherto, becomes a paying part of agricultural industry. Without protection of the breeder's work this will never be possible on a large scale.

Forms of protection

In principle two forms of protection have been developed:

a. *The form of the civil right.* Here rights are attached to a newly bred, individual variety for the benefit of the breeder. These rights may be sold along with the variety or transferred in any other way. A condition for the possibility of this form of right is that the variety in question is identifiable. For the eventual infringement of this right consists in the unlawful sale of material of a protected variety by someone else and this infringement can only be ascertained by identifying the material that has unlawfully been sold.

b. *The form of the public right.* Here rights are attached to seedfirms or plant breeders. In general the underlying idea is that a firm, adapted for breeding work and apparently doing it regularly and the variety or varieties of which show useful qualities in variety trials, may bring seed into the trade, whereas a firm which does not satisfy these conditions is not allowed to do so. Identifiability of the variety may be desirable but is not necessary, for now the eventual infringement is a violation of the administrative law forbidding

to sell any seed of e.g. sugarbeets, winter-carrots or, generally speaking, of an easily recognizable *group* of plants (unless as an acknowledged retailer for an acknowledged breeder).

In order to understand how these forms of protection of the breeder's work have been developed we have to dwell for a moment on what is meant by „variety”.

What is meant by „variety”

We talk of a variety, when we recognize a special type in a group of plants being present in all these plants and also occurring again after multiplication of these plants. In other words: *a variety of any plant is a type of that plant which can be reproduced with constant characteristics.*

Without this reproductiveness as a constant form it is not possible to identify a variety. Without the possibility of identification it is not possible to give a fixed name to a variety, to attach to this name a fixed idea about its particular value for its culture, or to attach special rights to the variety for the benefit of the breeder. For all these things it is necessary to talk of a variety only if we are concerned with a fixed thing being identifiable. It is amazing how much money has been wasted on variety-trials which are useless, because of the fact that on reading a report on these trials one does not know which varieties really have been tried.

So we have to answer the question how far varieties can be reproduced as a constant form and identified, and to which extent they are, on the ground of the forgoing, liable to a fixed name and to the eventual attachment of rights.

Varieties of plants that are propagated vegetatively (e.g. apple, strawberry, rhubarb) are generally constant. Apart from sparsely occurring mutations or from mixtures with nearly similar seedlings of a variety (as in the case of strawberries) they are alike in all parts before and after the multiplication. Therefore the varieties are mostly easily identifiable. Of course there are always groups of varieties here and there which can only be separated with difficulty because they have nearly the same characteristics, but in principle they remain identifiable. This is the case e.g. with the Versailles-group of the red currant, with the Baldwin-group of the black currant, with the Early Rivers-group of the cherry and with some clones of the strawberry Deutsch Evern. In such groups of varieties the differences are so small, that the analysis of the characteristics has not yet made enough progress to render a distinction possible and that, in addition to a morphological distinction even a physiological distinction may be tried. It will not always be necessary to trace these small differences, because they are mostly of no economic use whatever. But in cases where the said differences are of more importance one may presume that in principle the distinction will be possible by a further refinement of the analysis of the characteristics.

Self-pollinators (e.g. pea, bean, tomato) find themselves in this respect close to plants that are propagated vegetatively. Not only mutations but also spontaneous crossings with other varieties or (especially in the case of young varieties) occasionally a splitting up in some respects may cause a change of the characteristics here. But varieties of self-pollinators with heterozygote elements are apt to pass automatically, after some generations, into a mixture of homozygote lines. Therefore they become of themselves a mixture of varieties which can be reproduced as constant forms and also be separated. Therefore, also with the self-pollinators, the distinction of fixed, constant varieties generally presents few difficulties. Of course one has also here a number of groups of varieties closely resembling each other which can only be distinguished with

difficulty, because of the very small differences. But also here one may expect that refinement of the analysis of the characteristics will give the solution, if required.

With the cross-pollinators it is quite different. For the varieties of cross-pollinators are never thoroughly constant. They contain besides more or less homozygote elements many heterozygotic (i.e. varying, splitting) elements. Therefore the varieties of cross-pollinators cannot be considered as entirely constant. But the contrary, i.e. the idea that they would be entirely variable and inconstant, is neither true. One will find that a certain main type is constant, whereas many of its smaller characteristics are variable. Therefore the constant main type is identifiable and liable to a fixed name, which is not the case with the separate selection (eventual composition of selections) from the main type. For the sake of simplicity I will call a constant main type a *basic variety*, and that which a plant breeder makes of it from plant generation to plant generation a *selection*. Let me explain this by an example.

Everybody knows the red garden beet Flat Egyptian. In the course of time some constant main types or basic varieties have been developed from it, which can be distinguished by the type of foliage, by the fact whether they have an angular root or not, by the root-index (l/d , i.e. the length or height of the root divided by the diameter). The foliage can be short, medium or long, the outlines of the root angular or non-angular, (with an intermediate form of slightly angular); the root index can be $< 0,63$ (flat) or $> 0,63$, with a maximum of 0,69 (thick-flat).

In Holland we chiefly know the following basic varieties:

- a. Egyptian Short Top Flat Angular;
- b. Egyptian Short Top Thick-flat Non-angular;
- c. Egyptian Medium Top Flat Angular;
- d. Egyptian Medium Top Flat Non-angular;
- e. Egyptian Medium Top Thick-flat Non-angular.

Each of these 5 forms is, regarding its main characteristics, constant in reproduction. But the selections which can be derived from it may differ according to the plant breeder, the degree of selection and the circumstances under which selection took place; in principle they are not constant. They may be more or less nicely shaped, have a more or less smooth skin, a darker or lighter colour, be fast or slow growers, etc., and in all these things they may be more or less homogeneous. But moreover they differ in all these characteristics according to the breeder; and also the product of the same breeder may differ more or less in every new plant generation.

Refinement of the analysis of the characteristics can never bring a solution here, for notwithstanding the fact that the main characteristics are constant in reproduction (provided selection is applied), this is not the case with the whole complex of smaller characteristics. The latter remains variable and therefore provides no solid basis for identification.

In view of the above we can ascertain that in the case of self-pollinators and plants being propagated vegetatively, we are generally dealing with varieties in the sense of types which can be reproduced as constant forms. With cross-pollinators it is different. There one can distinguish main types (basic varieties), which can easily be kept constant and the selections from them, which are not constant.

Therefore the varieties of plants that are propagated vegetatively and of self-pollinators in addition to the basic varieties of cross-pollinators are in principle identifiable, but the selections (or compositions of selections) derived from the basic varieties are not identifiable in principle.

Of course no exact line can be drawn between self-pollinators and cross-

pollinators, but from our experience we think that in the field it becomes sufficiently clear in which cases it is practical to talk of a basic variety with variable selections, and in which cases to talk simply of a variety without more, or of a group of separate varieties which, though resembling each other, can each be reproduced as a constant form.

A good nomenclature as a starting point

Protection of the breeder's work is necessary to ensure that the grower of vegetables, the farmer, the fruit grower etc. have the best possible varieties at their disposal, in order that they, in their turn, may serve the agrarian production to the best of their abilities. The breeder, therefore, should not be protected for his own sake, but because of the fact that he is an indispensable factor in the agrarian production.

For the agrarian production it is necessary in the first place, that there is a fixed relation between variety and name. In view of the complications arising here, as we have seen, it is necessary for the denomination of varieties to use certain rules resulting from the nature of the variety material.

Should we agree upon these rules, then it would be possible to develop a useful legislation for the denomination of varieties.

The first step to such a legislation has already been taken in France, in which country „la loi du premier août 1905 sur la répression des fraudes” was applied to the seed trade (Décret no 49-773 du 11 juin 1949).

In 1932 a decree was already promulgated by which a catalogue of plants and varieties, in addition to a register of newly bred varieties, was instituted. In 1942 a „comité technique permanent de sélection des plantes cultivées” was formed, which committee had to make the „catalogue”. It largely consists of experts of seed firms and it has begun to make lists of varieties of a number of plants which are in circulation. At Versailles, descriptions and records are made at the experimental station and, therefore, we may assume that at a given moment one will have for certain plants a definite opinion, agreed upon by the seed trade, about the question of which name is right for a certain variety. This is followed up by Decree no. 49-773 of the 11th of June, by which, among other things, the following is provided:

- a. in commercial intercourse every denomination of propagating material of a variety contained in the „catalogue” should correspond with the name fixed by the „catalogue”.
- b. no propagating material of new varieties may be sold, unless it has been entered in the „catalogue”.
- c. in commercial intercourse the propagating material should be provided with a label bearing the name and address of the seller in addition to the names of the plant and the variety. The same indications should also figure in the invoices and the books. All these things are checked by the „Service de la répression des fraudes”.

Thus a legislation has been arrived at, expressing the fact that there is a fixed relation between variety and name, and that, therefore, the sale of propagating material under a false name can be considered as a fraud.

This law is still too young to ascertain how it works in practice. But it deserves full attention in all countries, being a starting point for further legislation in this field. To secure the co-operation of the trade and to keep it in the long run, one will have to reckon with the biological nature of the material when fixing the names for the varieties.

One fixed name for varieties of plants that are propagated vegetatively will generally not present any difficulties. According to the official rules for nomenclature the oldest name having validly been published is correct.

As a rule a variety of a self-pollinator can easily have one fixed name too. Ten years ago a stringless French bean like Double White was the same variety as it is now, and will remain it, as we may expect, for another ten years and more. Nevertheless some peculiar alterations in varieties of self-pollinators are met with sometimes. Of the tomato variety Ailsa Craig e.g. there are types with finer and other types with larger fruits. How far this is a question of crossing with other varieties or of small mutations in the variety, is not yet clear to us. But at any rate we have obtained here under one name some different, largely similar, but in one part slightly deviating, constant types. I believe it best in such cases to maintain the old name for these nearly similar types, adding a further indication.

Apart from such small groups of nearly similar types, the questions about synonymy in the case of the plants that are propagated vegetatively or self-pollinators generally do not present many difficulties in practice.

Every normal plant breeder feels it to be ridiculous if he, all of a sudden, would bring a Belle de Boskoop apple or a stringless Double White bean under a new name into the trade.

The difficulties of synonymy present themselves particularly in the case of cross-pollinators. This is quite logical and moreover justified in a sense. For one may assume that in fact every breeder will derive a slightly differing selection from the same basic variety. Nevertheless the wish for more clarity in this field is self-evident. And this wish can be complied with by means of the concepts „basic variety” and „selection”.

The basic variety is identifiable and liable to a fixed name. A more or less describing name is best suited for this purpose; a fancy name should be avoided in most cases. The selection, on the other hand, is not identifiable. Therefore it cannot have a fixed name as is used for a constant variety but only an indication referring to the firm where it is regularly selected. The most simple indication of a selection is the name of the basic variety, followed by „selection X”, if the firm X is the breeder. It is also possible to indicate a selection by a fancy name. Then this fancy name is substituted for the name of the firm which is regularly producing the selection; in fact it has not the nature of a variety name, but it is (slightly exaggerated) more like a trade mark. With these observations as a background, I have a feeling that in practice we are quite near:

- a. looking upon the name of a variety which is propagated vegetatively, the name of a variety of a self-pollinator and the name of a basic variety of a cross-pollinator as an established name and upon the deliberate use of an other name as a fraud;
- b. leaving the denomination of a selection from a basic variety to the firm which is regularly producing the selection, under the condition that in one way or another some indication of the basic variety to which the selection belongs, should be given.

Further I would attach the conclusion to the above, that the category of names mentioned under a should no longer be liable to registration as a trade-mark in future. Registration of a real variety name as a trade-mark is only a substitute method for the prevention of encroachments on the interests of the breeder, which registration can be disposed of after protection of a plant breeder's right on the variety has been realized. For this protection implies the protection of the name. In cases where a breeder has no rights to a special variety, he should also have no rights to the name of such a variety.

The name of a selection from a basic variety has to remain liable to registration with the Merchandise Marks Bureau. In my opinion it should not be on a register of varieties in which the names of identifiable varieties are entered, with the intention to fix an established name for a variety that has been described definitively. What one can do is to make a separate register or a separate division in the general register for the registration of a name which a certain firm wants to fix for its selection from a certain basic variety. For notwithstanding the fact that it is possible and maybe desirable to register such a name as a trade-mark it should be borne in mind, that a certain trade-mark can be used for all the things produced by the firm in question, whereas it will generally be preferable to use the name of a certain selection for the selection or the composition of selections from one certain basic variety only.

It is of the utmost importance to agree upon the rules for the nomenclature of varieties. When this is properly fixed there are still different forms of plant breeder's protection possible.

I will proceed now to the discussion of the most essential points in the development of civil law for the breeder's protection; after that I will discuss such points in the development of public law for the same purpose.

Plant Patent Act 1930

The Americans were the first to make a law on the protection of the plant breeder's properties. In the U.S. the so-called Plant Patent Act came into force in 1930, as a part of the common patents act. Thus the possibility has been created to obtain a patent for new varieties of plants being propagated vegetatively (with the exception of such which are multiplied by means of tubers).

The general procedure is that the applicant of a new variety sends his application, together with a most accurate description and one or more photographs, to the Patent Office. This bureau has the description and photographs verified by the plant experts of the Bureau of Plant Industry. If these consider the evidence given herein satisfactory, the Commissioner of Patents (Patent Office) will, as a rule, register the variety in question. In case they consider the evidence unsatisfactory the application is refused.

At the Patent Office all the plant patents having been registered in the course of years are kept. In 1943 they amounted to 610, now to more than 1000. Descriptions on such a patent differ very much. They have been made by the applicants and often show all the characteristics of amateurism.

New varieties of plants that are propagated vegetatively are still being presented to the Patent Office for registration. But according to the Americans I have discussed this matter with, this is at the moment rather done for the publicity resulting from the registration than for the protection of the breeder's right. For practice has shown that it is very difficult for the breeder to prove an eventual encroachment on his plant patent in court. This is presumably due to the amateurish character of most descriptions and the insufficient development of an official institute which should be specialized in the field of research on varieties and should act as an objective expert advisory body before the judge.

Be this as it may, after the first push ahead, the interest in plant breeder's protection has died down a little in the U.S. But, as is often the case with difficult things deserving a right of existence, they crop up, fall into the background because they have still to go through a period of ripening and then they will present themselves again. Even if the problem of the plant breeder's right would have to experience more quiet periods of ripening; it will not disappear again in all probability.

Kwekersbesluit 1941 (Plant Breeder's Decree 1941)

The second push was given in the Netherlands in the form of the Plant Breeder's Decree 1941. This creates the possibility for:

- a. obtaining a breeder's right on a new variety;
- b. measures of public law with respect to the trade of propagating material of varieties.

Only a. has been declared applicable to horticultural plants. In as far as measures of public right have been taken at the moment with respect to the trade in propagating material, these have not been provided by the Plant Breeder's Decree 1941 but by the „Besluit Tuinbouwkeuringsdienst 1941" and the „Aansluitingsbesluit Boomkwekerijgewassen 1944".

The breeder's right is laid down in chapter II of the Plant Breeder's Decree 1941.

Which new provisions does this decree contain in comparison with the American Plant Patent Act?

The Plant Breeder's Decree creates, as does the Plant Patent Act, the possibility to obtain a sort of plant patent on a certain variety, but it has been established independent of the Patents Act. Owing to this the Plant Breeder's Decree can more easily allow for the peculiarities that will occur in the plant world.

The breeder's right of the Plant Breeder's Decree 1941 may, contrary to the right of the Plant Patent Act, be expressed in two forms:

a. in the form of a monopoly for the breeder, as given by the plant Patent Act;

b. in the form of indemnification of the breeder; then the breeder is under an obligation to allow increase of his variety by other people.

The form which a breeder's right in a special case should have is made conditional in the Plant Breeder's Decree on the question whether an obligatory list of varieties (indicating the varieties of which material may be put into the trade) or a free list of varieties (only with a view to giving recommendations) has been instituted. Practice has shown, however, that the nature of the plant should be the first consideration here.

To give a couple of examples: for a potato and a fruit tree the form mentioned under *b* will be best, because with these plants a dispersed multiplication is most practical (the variety remains constant in any case; one firm will find it difficult to meet all needs; health selection); for a sugar-beet the form mentioned under *a* will be obvious (only continued selection will preserve the variety; one firm can produce much seed).

In the Plant Patent Act the potato has been excluded from patent rights, because of the objections raised, on the ground of the public interest, to the fact that the production of such an important food-plant might be hindered by a monopoly. The form of breeder's right in the Netherlands, mentioned under *b* renders it possible, however, to exclude this monopolizing while retaining the breeder's right on some remuneration of his breeding work. Payment of this money is based on the assumption that there is some official body collecting and paying it. This can also be attained by a licence-system. Then the breeder obtains the monopoly, on condition that he also places the variety into the hands of others to exploit it, whilst levying licence money on the proceeds.

Further, the Plant Patent Act excludes all the plants that are multiplied by means of seed from patent rights. The Plant Breeder's Decree 1941, on the other hand, admits in principle the breeder's right for all sorts of plants. In the general opinion of the breeders this is a situation which is most desirable.

Technically, however, it is only possible to protect identifiable varieties. Further the procedure on the ground of the Plant Breeder's Decree 1941 differs from the American procedure, among other things by the fact that not the description by the breeder preponderates but the description (together with all other documentation) furnished by the research institution.

Also the Plant Breeder's Act 1941, in its actual form, is not the last word on the breeder's right.

Non-identifiable varieties (selections)

Restriction of the protection of breeding work to the identifiable varieties (new varieties of plants being propagated vegetatively and of self-pollinators, and new basic varieties of cross-pollinators) excludes a very important part of the breeder's work. For instance in the agricultural sphere this would be the breeding in existing basic varieties of sugar-beets, many fodder plants and rye. In the horticultural sphere the same applies to the existing basic varieties of the brassicaceous plants, many leafy vegetables, carrots, radish etc. In short, in case of protection of the breeder's work by the way of civil right a very important part of the breeding work which lends itself pre-eminently to being performed by commercial plant breeders will necessarily be excluded from the protection.

Therefore, it is not to be wondered at that sedulous searches have been made for ways which may lead to a form of protection for this breeding work.

Two ways have been chosen, both based on the same principles, which are the following: firms occupying themselves with selections in a certain basic variety are registered on the part of the government, semi-official bodies or some society. Then these bodies examine which of these firms show sufficient evidence, that they are really engaged on breeding work in the basic variety in question. These are invited to take part in comparative trials. Finally, if the selection of a certain firm has made a good or sufficient impression in the trials, the name of this firm is published.

On this basis two different ways are possible:

- a. A law forbidding the sale of propagating material of disqualified selections. In fact this means, that he whose selections have been disqualified is no longer allowed to sell seed of the basic variety in question, unless as a retailer for a breeding firm with an acknowledged selection.
- b. Recommendation of the acknowledged selections, without any control of the trade. In this case the user of seeds has to choose a good selection on his own responsibility.

If, for the sake of protection of breeding work in non-identifiable varieties, the way mentioned under a. has been chosen, the government-regulations with respect to the admission of propagating material are generally also applied to the identifiable varieties at the same time.

Admission of varieties to the trade, only after official acknowledgement

As far as I know, Germany was the first to choose this way of protection (Grundregel für die Anerkennung von Gemüsesaaten vom 10. November 1938, RN Vbl. S 619). The idea is that only first-class propagating material shall be admitted to the trade, for the furtherance of horticulture. Only propagating material of varieties which have been tried on their value for use and approved of are allowed to be brought into the trade.

The following distinctions are made: „Hochzuchtsorten“, which are varieties registered in the name of one breeder;

„Ringsorten“, being varieties which may be brought into the trade by a limited, closed number of breeders, and „Gruppensorten“, which can be sold by an unlimited number of breeders on condition that those breeders, on behalf of their breeding work, have been acknowledged for such a variety.

The „Sortenliste der im Bundesgebiet zugelassenen Sorten“ stipulates which varieties are allowed to the trade and by which firms this may be done.

As soon and as long as a breeder has a „Hochzuchtsorte“ on the „Sortenliste“, he has a monopoly on the trade in this variety. If he is listed for a „Ring-“ or a „Gruppensorte“ he has this monopoly together with a number of other breeders.

A new variety (a „Hochzuchtsorte“) can only be placed on the „Sortenliste“ after a previous identification and next an investigation into its cultural value.

The possibility for a breeder to have a selection from a basic variety placed on the „Sortenliste“ depends on the question whether such a breeder can prove that he is doing breeding work in it and if it shows satisfactory results in variety trials. Varieties of self-pollinators on which, before these measures became effective, no proprietary rights could be exercised are dealt with in the same way. Then these two categories come under the head „Gruppensorten“, meaning that a group of firms has been admitted for such a variety. These regulations closely link up with those for the agricultural plants in Germany. From discussions in some journals on the expected new seed-law it becomes evident, that some people in Germany prefer a more free regulation for the horticultural seeds.

Austria has the „Zuchtbuch des Bundesministeriums für Land- und Forstwirtschaft für Hochzuchten landwirtschaftlicher Kulturpflanzen“. This is a register for good varieties of cultural plants. Also the protection of breeding work will be based on it (Pflanzenzuchtgesetz, 12 December 1946).

The Netherlands have their Plant Breeder's Decree 1941 which renders it possible to arrive at protection not only by course of the civil law but also by public law. In horticultural circles the meaning prevails that preference should be given to provisions by civil law, whereas in agricultural circles the way of the public law is accepted.

Free recommendation of good varieties and selections

When the admission of varieties to the trade is controlled by the government, it is in particular the official investigation into the cultural value which forms the norm in deciding whether the variety or selection in question will be admitted to the trade. In Germany this investigation has to be accomplished within a term of three years. This time may be long enough for agricultural plants with their rather uniform culture. But this official testing of varieties on their cultural value entails a great danger for the horticultural plants, which have much more varied ways of culture, for no variety will be tested for all its possibilities in a few years. Besides, in most cases we do not know what is exactly the reason why a certain variety (both of agricultural and horticultural plants) is suited for practice or not. This is largely a question of sheer experience under the practical conditions itself.

Therefore judgment on the ground of trials which have only been carried on for a couple of years may easily lead in some cases to a certainly unintentional but nevertheless real arbitrariness with regard to the breeders.

That is why many people prefer a free recommendation of varieties without any control of the trade. Should a breeder think his non-recommended variety to be misjudged, then he will have a chance of proving this in practice, but the users have been warned to be careful with it.

The registration of the proprietary right on a new identifiable variety or basic variety then becomes a deed by itself, apart from the cultural value, and only based on characteristics showing that the variety is new and distinct. The determination of the cultural value of the existing and of the new varieties, and of the selections from basic varieties is another matter then.

In the Netherlands this is done for vegetable seeds, according to a system for which some important elements have been derived from methods used in Denmark, and which have some points in common with the system applied by Wisley (England) and the All America Selections in the U.S.A.

Some characteristics of this system are the following:

a. In order to investigate properly certain varieties and selections they should be tried for several years, which, however, is not practical. Therefore, every six years they are tried for two consecutive years in three or four cultural centres. They are judged by a committee which is composed of vegetable growers, seed growers and official experts, none of them holding a predominant position. The necessary weighings, measurements, counting etc. are effected by the staff of the Institute of Horticultural Plant Breeding, usually in co-operation with members of the advisory service in the district of which the trials are carried out. Thus both practical and scientific men co-operate to arrive at a result rapidly.

b. The seed samples are exclusively sown under a number, so that none of the judges knows whose variety or selection he is judging.

c. The acknowledged numbers are published. The ones that have been disqualified remain secret.

d. After the result of the examination is known the acknowledged numbers, if required, can be further tested on various aspects by research stations.

e. Every seed firm which can prove to have been working on the variety in question for at least three plant-generations, is allowed to take part in these trials.

In this case the only protection of the breeder's work, in as far as the non-identifiable selections of existing basic varieties are concerned, consists in the free publicity which is given. This may seem to be a somewhat poor and uncertain form of breeder's protection. But from experience we know that vegetable growers fairly soon learn to conform to these lists of recommendation and that firms which have acknowledged varieties or selections strongly feel the influence of these lists.

Conclusion and summary

As, in the long run, protection of the breeder's work can only be effective if it is international and in view of the fact that international protection is only possible if the laws in various countries are more or less based on the same principles, I will finally try to build up a sort of synthesis of the various elements which have developed.

Since many years this object has been strongly pursued by the ASSINSEL (Association Internationale Des Sélectionneurs Professionnels Pour La Protection Des Obtentions Végétales), showing that also professional breeders are convinced of the necessity of these efforts.

In trying to make up a synthesis, it seems to me that, in general, we have to reckon with three elements:

a) The standardization of variety names as a basis.

b) The attachment of civil rights to newly bred varieties in as far as this is possible.

c) The investigation of the cultural value of existing and new varieties, with or without consequences of public right.

To develop the possibility of arriving at a standardization of varieties and names of varieties, the establishment of research institutes occupying themselves with researchwork on varieties, in co-operation with practical breeders, is a first consideration. In a number of countries this is already done on a more or less extended scale. Lawful provisions for the denomination of varieties in the sense of the French legislation in this field would excellently link up with the above, in connection with the institution of an official „catalogue” or general register of varieties.

To attain this end it is necessary, however, to adopt general rules for the nomenclature of varieties; they should be based on the biological nature of the variety-material. In addition I would recommend the following.

a) A simple registration of the names of varieties that are propagated vegetatively; also in the case of self-pollinators. Groups of nearly similar varieties, which only differ in some points, could bear the same name if this were required, adding a short name to refer to the small differences, e.g., Cox Orange Pippin and Red Cox Orange Pippin.

b) For the cross-pollinators registration of the names of the constant main types (basic varieties) should take place. Each breeder deriving his selection or composition of selections from such a basic variety should be free to give a separate name to his selection, on condition that mention should be made of the basic variety to which the selection in question belongs. This name only refers to the breeder or breeding company and cannot be considered as a real variety name. But these names could be entered in a separate part of the general register to satisfy certain groups of breeders.

In those countries which have developed an inspection service for propagating material of cultural plants, this register of names will serve excellently as a basis for the inspection of trueness to type. Also measures for the protection of breeding work may be based on it.

It is logical that the legislation regarding the conferment of a breeder's civil right, a plant patent, a „brevet végétal” on a newly bred variety comes next. This breeder's civil right is only possible for identifiable varieties. This right is in no way related to the cultural value of the patented new variety. The breeder obtaining such a right on a certain variety has to look for himself if there is any value in his variety. But in case the variety is more or less a success he has a proprietary right on it and he can institute legal proceedings against offenders.

At the moment some breeders do not attach much importance to the breeder's civil right, because a great part of the most valuable breeding work cannot be protected by it. In my opinion, however, this element in the legislation for protection of the breeder's work should not be lacking. For some groups of plants it can be left at a rudimentary form, but for others it can be fully developed.

It is only after this that the third element comes into play, viz. the tests on the cultural value of existing and new varieties, to which consequences of public law may be attached or not. At any rate three factors are playing a part here:

a) The invitation of seed firms to hold material of their varieties or selections available for tests on the cultural value. In addition certain conditions can be made, e.g. that the firm should be well-appointed for breeding work and should have worked on the variety or selection in question for at least three consecutive generations of plants, with discrimination in regard to the breeders who do not satisfy these conditions. Naturally varieties for which a

breeder's right has been obtained can only be sent in by the rightful owner. For varieties on which no proprietary rights have been established it is possible to enable all those breeders who have satisfied the special conditions, if they so desire, to take part in the trials from time to time; one may also exclude all the firms that did not satisfy these conditions the first time from all further trials in future. In my opinion preference should be given to the former.

b. The execution of comparative trials of varieties or selections in different areas. It would be best of course if this was done every year or every second year, but, except for some varieties, this will not be possible on account of the cost. Then it is advisable to carry out the trials according to some cycle, e.g. every six years and always in two consecutive years.

c) The publication of the acknowledged varieties and selections. In some countries they are already published in periodical descriptive lists of varieties which are often consulted by farmers and gardeners. In my opinion these lists of varieties have proved to be useful in practice. Therefore I should like to recommend them for the countries which have not yet introduced them.

Finally we have the question if consequences of public right should be attached to publications in the list of varieties. It is possible to take the stand that protection of the breeder's work should be obtained by only admitting to the trade propagating material of varieties or selections figuring in the list of varieties, in as far as they have been produced by the firms mentioned in that list. But also preference may be given to protection of the breeder's work by means of a free, only recommending, list of varieties. In that case the growers should be capable of choosing the most suitable varieties from the list themselves. There is no reason why the law should not cover both possibilities. Personally I would prefer a free list of varieties. But in cases of doubt whether the growers are already clever enough to think for themselves, a provisional obligatory list of varieties might be instituted. The main point of breeder's protection should sooner lie in the conditions for participation in the variety trials and in the education of the growers than in the question if the list of varieties is free or obligatory. For the obligatory list is a means of coercion, which may bring consequential difficulties in its train.

If it would be possible to arrive at an international legislation, in which all the above elements are present in principle, but with freedom of laying stress on different points according to the nature and possibilities of the country in question and even according to the nature of certain groups of the population (or the nature of certain cultural plants) within a country, we might arrive at a common basis for protection of the breeder's work.

BESCHERMING VAN DE KWEKERSARBEID

Samenvatting en conclusie

Daar bescherming van de kwekersarbeid op de duur alleen effect kan sorteren, indien zij internationaal plaats vindt, en daar internationale bescherming alleen mogelijk is, indien de desbetreffende wetten in de verschillende landen ongeveer volgens dezelfde grondgedachte worden opgebouwd, wil ik tenslotte proberen een soort synthese samen te stellen van de verschillende elementen die tot ontwikkeling zijn gekomen.

Sinds verscheidene jaren is het de ASSINSEL (Association Internationale Des Sélectionneurs Professionnels Pour La Protection Des Obtentions Végétales), die krachtig werkzaam is ter bereiking van dit doel. Daaruit blijkt, dat ook de beroepskwekers overtuigd zijn van de noodzakelijkheid van dit streven.

Wanneer ik dan tot een poging tot synthese overga, lijkt het mij, dat wij in grote lijnen met drie elementen te maken hebben:

a. Als basis de standaardisatie van rasnamen.

b. Het verbinden van private rechten aan nieuw gekweekte rassen, voorzover dit mogelijk is.

c. Het gebruikswaarde-onderzoek van bestaande en nieuwe rassen, al of niet met publiekrechtelijke gevolgen.

Ter ontwikkeling van de mogelijkheid een standaardisatie van rassen en rasnamen teweeg te brengen, is in de eerste plaats nodig het instellen van onderzoeksinstituten waar in samenwerking met vakmensen rassenonderzoek kan plaats vinden. Dit geschiedt reeds in verschillende landen op meer of minder uitgebreide schaal. Hierop zou uitstekend aansluiten een wettelijke regeling voor de ras-benaming in de trant van de Franse wetgeving op dit gebied, in verband met het instellen van een officiële „catalogue” of algemeen rassenregister.

Daarvoor is dan echter noodzakelijk, dat wij internationaal bepaalde regels voor de rassen-nomenclatuur aanvaarden, gebaseerd op de biologische aard van het rassenmateriaal. Daarbij zou ik dan willen aanbevelen:

a. Dat bij rassen van vegetatief voortgekweekte gewassen en bij rassen van zelfbestuivers een eenvoudige registratie van de rasnaam plaats vindt. Voor groepen van in hoofdzaak gelijke rassen, die slechts in een enkel onderdeel iets verschillen, zou desgewenst dezelfde naam kunnen worden gevoerd, maar met een kleine toevoeging die op de kleine afwijking slaat. B.v. Cox Orange Pippin en Rode Cox Orange Pippin.

b. Dat bij kruisbestuivers registratie van de namen van de constant reproduceerbare hoofdtypen (grondrassen) plaats vindt. Ieder kweekbedrijf dat uit zo'n grondras van generatie tot generatie zijn selectie of compositie van selecties maakt, moet vrij zijn hiervoor een afzonderlijke naam te voeren, mits op een of andere wijze wordt aangegeven, tot welk grondras deze selectie behoort. Deze naar het selecterend bedrijf verwijzende naam kan niet worden beschouwd als een echte rasnaam. Maar voor groepen kwekers die dit wensen, zouden deze namen in een afzonderlijke afdeling van het algemene register of in een afzonderlijk register kunnen worden ingeschreven.

Dit namen-register zal uitstekende diensten kunnen bewijzen, zowel als basis voor keuring op rasechtheid, in de landen waar een keuringswezen ter inspectie van het voortkweekingsmateriaal van rassen van cultuurgewassen tot ontplooiing is gekomen, en als basis voor de maatregelen ter bescherming van de kwekersarbeid.

Logischerwijze komt als tweede punt de wetgeving betreffende het verlenen van een privaat kwekersrecht, een plant patent, een brevet végétal op een nieuw gekweekt ras. Dit private kwekersrecht is slechts mogelijk voor identificeerbare rassen. Dit recht heeft op zichzelf niets te maken met de gebruikswaarde van het nieuwe gepatenteerde ras. De kweker, die zo'n recht op een bepaald ras verkrijgt, moet zelf maar zien of er een exploitatiewaarde in het ras steekt. Maar voor het geval, dat het ras enige opgang maakt, heeft hij er een eigendomsrecht op, en kan hij inbreuken op dit recht voor de rechter brengen ter bestrafing. Sommige personen hechten vooralsnog geen grote betekenis aan het private kwekersrecht, omdat een belangrijk deel van het meest waardevolle kweekwerk er geen bescherming in kan vinden. Maar m.i. mag dit element in de wetgeving ten behoeve van de bescherming van de kwekersarbeid niet ontbreken. Voor sommige gewassen-groepen kan het dan desgewenst in een min of meer rudimentaire vorm worden gelaten, voor andere ten volle worden ontplooid.

Pas hierna komt het derde element, nl. het gebruikswaarde-onderzoek van

bestaande en nieuwe rassen, waaraan dan al of niet publiekrechtelijke gevolgen kunnen worden verbonden.

Hierin spelen in ieder geval drie factoren een rol:

a. Het uitnodigen van kweekbedrijven om materiaal van hun rassen of selecties ter beschikking te stellen voor beproeving op gebruikswaarde. Daarbij kunnen bepaalde voorwaarden worden gesteld, b.v. dat het bedrijf op het verrichten van kweekarbeid goed is ingericht en aan het ras of de selectie waarmee wordt deelgenomen tenminste drie opeenvolgende plantengeneraties heeft gewerkt, met discriminatie t.a.v. de bedrijven die aan deze voorwaarden niet voldoen. Rassen waarop een kwekersrecht is verkregen kunnen uiteraard alleen door de rechthebbende worden ingezonden. T.a.v. rassen die algemeen eigendom zijn, kan men of periodiek alle bedrijven, die dit wensen, en voorzover zij aan de gestelde voorwaarden voldoen, in de gelegenheid stellen aan de proeven mee te doen, of de bedrijven die de eerste keer niet aan de voorwaarden voldeden blijvend uitschakelen. Het eerste verdient m.i. de voorkeur.

b. Het uitvoeren van een vergelijkend onderzoek van de rassen of selecties op een serie proefvelden. Het mooiste is natuurlijk jaarlijkse of tweejaarlijkse uitvoering van de proeven. Behalve voor enkele gewassen, zal dit om de kosten in de regel niet mogelijk zijn. Dan verdient het aanbeveling de proeven volgens een bepaalde cyclus, b.v. om de zes jaren uit te voeren, en dan steeds in twee opeenvolgende jaren.

c. De publicatie van de goed bevonden rassen en selecties. In sommige landen geschiedt deze publicatie reeds in periodiek verschijnende beschrijvende rassenlijsten, die door de boeren en tuinders druk worden geraadpleegd. Het nut van deze rassenlijsten is m.i. in de praktijk bewezen. Daarom zou ik deze gaarne willen aanbevelen ook voor de landen, waar men ze nog niet kent.

Het is nu verder alleen nog maar de vraag of men aan de publicatie in de rassenlijst al of niet publiekrechtelijke gevolgen wil verbinden. Men kan zich op het standpunt stellen, dat men de kwekersarbeid wil beschermen door alleen voortkweekingsmateriaal in het verkeer toe te laten van rassen of selecties die in de rassenlijst zijn genoemd en voorzover geproduceerd door de in de rassenlijst genoemde bedrijven. Maar men kan ook de voorkeur geven aan de bevoordeling van de kwekersarbeid d.m.v. een uitsluitend aanbevelende, vrije rassenlijst. In dat geval vertrouwt men op de mogelijkheid de tuinders en de boeren zoveel ontwikkeling te geven, dat zij zelf aan de hand van de rassenlijst zullen uitzoeken wat voor hen het beste is. Er is echter geen enkele reden waarom men niet beide mogelijkheden in de wet zou vastleggen. Persoonlijk zou ik de voorkeur willen geven aan de vrije rassenlijst. Maar wanneer men voor bepaalde gewassen geen vertrouwen meent te mogen schenken aan het zelfstandig oordeel van de boeren of tuinders die ze moeten telen, kan men hiervoor voorlopig desgewenst een gebonden rassenlijst instellen. Het zwaartepunt voor de bescherming van de kwekersarbeid echter moet m.i. primair meer liggen in de voorwaarden die men stelt voor deelname aan de rassenproeven en in de opvoeding van de boeren en tuinders, dan in de vraag of de rassenlijst vrij of gebonden is. De gebonden rassenlijst vormt nl. een dwangmiddel bij uitnemendheid, met alle gevaren daaraan verbonden.

Wanneer men echter internationaal tot een wetgeving zou kunnen komen, waarin de geschetste elementen in principe alle aanwezig zijn, maar waarin men naar de geaardheid en de mogelijkheden van het betreffende land, en zelfs naar de geaardheid en de mogelijkheden van bepaalde bevolkingsgroepen in eenzelfde land, of voor bepaalde gewassen, het accent op verschillende wijzen zou kunnen verschuiven, zouden wij wellicht tot een gemeenschappelijke basis voor de bescherming van de kwekersarbeid kunnen komen.

MEDEDELINGEN 1)

VAN HET INSTITUUT VOOR DE VEREDELING VAN TUINBOUWGEWASSEN

1. Hubbeling, N. Vatbaarheid van stamslabonenrassen voor ziekten, welke met het zaaizaad overgaan. 2e druk, Maart 1946	f 0,10
2. Banga, O. Onderzoek naar de cultuurwaarde van enige nieuwe tuinbonenrassen. September 1945	Uitverk.
3. Banga, O. Sluittkoolproblemen in Amerika. September 1946	f 0,50
4. Algemene Veredelingsdagen 1946. Verslag van voordrachten en discussies. Maart 1947	f 0,50
5. Banga, O. Rassenkeuze en rassenveredeling bij groentegewassen in Oostenrijk. November 1947	Uitverk.
6. Banga, O. Krotenstudies. Nov./Dec. 1947	f 0,25
I. Invloed van de zaaitijd op de productiviteit van de kroten.	
II. Invloed van de zaaitijd op de looftontwikkeling van kroten.	
7. Banga, O. De veredeling van de aardbei in de V. S. van Amerika. December 1947	f 0,60
8. Algemene Veredelingsdagen 1947. Verslag van voordrachten en discussies. Juli 1948	f 1,15
9. Banga, O. De veredeling van tuinbouwgewassen in de V. S. van Amerika. Juli 1948	Uitverk.
10. Banga, O. Krotenstudies. November 1948	f 0,25
III. Vernalisatie en devernalisatie van bieten.	
IV. Verschillen in schiet-neiging bij verschillende rassen en selecties van platte of ronde kroten.	
11. Algemene Veredelingsdagen 1948. Verslag van voordrachten en discussies. December 1948	f 1,05
12. Banga, O. Het kweken van nieuwe vruchtboomonderstammen in Engeland. Maart 1949	f 0,20
13. Banga, O. en Hester G. Kronenberg. Teelt en veredeling van aardbeien in België. Juni 1949	f 0,20
14. Banga, O. Krotenstudies. Juli 1949	f 0,50
V. De inwendige vleeskleur van kroten. Haar beoordeling bij rassenvergelijking en selectiewerk.	
15. Andeweg, J. M. Veredelingsdoeleinden en -resultaten bij de tomaat. September 1949	f 0,20
16. Hubbeling, N. Veredelingsdoeleinden bij slabonen. September 1949	f 0,20
17. Algemene Veredelingsdagen 1949. Verslag van voordrachten en discussies. Mei 1950	f 1,40
18. Zeventien korte artikelen voor boomkwekers. Juni 1950	Uitverkocht
19. Banga, O. Krotenstudies. September 1950	f 1,50
VI. De invloed van het loof op de groeijsnelheid van de knol.	
VII. Classificatie van platte en ronde kroten naar knolindex, niveau van loofprestatie en groeijsnelheid.	
20. Andeweg, J. M. en M. Keuls. Praktijkproeven tomaten 1948—1949. October 1950	f 0,75
21. Banga, O. Krotenstudies. November 1950. VIII. Veredelingsmethodiek bij de rode biet	f 0,25
22. Kronenberg, H. G. Teelt en veredeling van fruitgewassen in Zwitserland. December 1950	f 0,25
23. Banga, O. en J. Sneep. Veredeling van tuinbouwgewassen in Denemarken. December 1950	f 0,25
24. Floor, J. Het enten van noten. Januari 1951	f 0,35
25. Floor, J. De vermeerdering van onderstammen voor fruitgewassen. Augustus 1951	f 0,75
26. Banga, O. Bescherming van de kwekerseigendom. September 1951	f 0,40
27. Sneep, J. Selectie op het juiste tijdstip. September 1951	f 0,35
28. Floor, J. Onderstammenonderzoek. September 1951	f 0,40
29. Gerritsen, C. J. Walnutenteelt. September 1951	f 0,45
30. Kronenberg, H. G. (I.V.T.) en H. J. de Fluiter (I.P.O.). Resistentie van frambozen tegen de grote frambozenluis <i>Amphorophora rubi</i> Kalt. October 1951	f 0,40
31. Sneep, J. De betekenis van de andromonoecische planten voor de veredeling van <i>Asparagus officinalis</i> L. November 1951	f 0,35
32. Algemene Veredelingsdagen 1951. Verslag van voordrachten en discussies. Maart 1952	f 2,50
33. Banga, O. Protection of the breeder's work. April 1952	f 0,45

RASSENLIJSTEN 1)

UITGEGEVEN DOOR HET INSTITUUT VOOR DE VEREDELING VAN TUINBOUWGEWASSEN

Eerste Beschrijvende Rassenlijst voor Griendhout, 1940. Redacteur Ir W. D. J. Tuinzing. (Uitgegeven door de N.A.K., maar verkrijgbaar bij het I.V.T.)	f 0,17
Tweede Beschrijvende Rassenlijst voor Populieren, Wilgen en Iepen, 1947. Redacteur Prof. Dr G. Houtzagers	f 0,50
Vierde Beschrijvende Rassenlijst voor Groentegewassen, 1951. Redacteur Dr O. Banga	f 1,50

PERSBERICHTEN UITSLAGEN PRACTIJKPROEVEN

18- 1-'50. Uitslag Praktijkproeven Tomaten 1948—1949.	}	Zijn geplaatst in diverse tuinbouwbladen.
10- 3-'50. Uitslag Praktijkproeven Wortel Berlikumer 1949.		
4-10-'50. Uitslag Praktijkproeven Tuinbonen 1949—1950.		
29-11-'50. Uitslag Praktijkproeven Bak- en Zomerwortelen 1949—1950.		
29-11-'50. Uitslag Praktijkproeven Platronde en Ronde Kroten 1949—1950.		
12-12-'50. Uitslag Praktijkproeven Pronkbonen 1950.		
21- 3-'51. Uitslag Praktijkproeven Boerenkool Westlandse 1949—1950.		
3- 9-'51. Uitslag Praktijkproeven Spitskool 1950—1951.		
18- 1-'52. Uitslag Praktijkproeven Vroege- en Herfst Rode kool 1950—1951.		
28- 3-'52. Uitslag Praktijkproeven Spruitkool 1950—1951 en 1951—1952.		

JAARVERSLAGEN 1)

VAN HET INSTITUUT VOOR DE VEREDELING VAN TUINBOUWGEWASSEN

Jaarverslag 1950. 1 (1951)	f 5.—
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1) Zolang de voorraad strekt kunnen deze publicaties franco worden toegezonden, na ontvangst van het vermelde bedrag op giro no. 425340 van het Instituut voor de Veredeling van Tuinbouwgewassen te Wageningen onder vermelding van wat verlangd wordt.

**PUBLICATIES VAN HET INSTITUUT VOOR DE VEREDELING VAN
TUINBOUWGEWASSEN IN ANDERE ORGANEN OF IN BOEKVOORM EVENTUEEL
IN SAMENWERKING MET ANDERE INSTELLINGEN ¹⁾**

Van de artikelen, waarbij de prijs genoemd is, zijn in beperkte mate overgedruken beschikbaar.
Overigens wende men zich tot de opgegeven bronnen.

- Boom, B. K. De liefhebberij in het vak. De Boomkwekerij 6, (Juni 1951), no. 17, p. 133.
- Floor, J. Enthoutjes 1. Wat er op de proeftuin van het I.V.T. te zien is. De Boomkwekerij 6, (Juli 1951), no. 20, p. 152.
- Elzenga, G. De teelt van valerian. Groenten en Fruit 7, (Juli 1951), no. 4, p. 57. Herba 10, (Aug. 1951), no. 7, p. 77.
- Reinders-Gouwentak, C. A. (Lab. v. Algem. Plantk.) en L. Smeets (I.V.T.). De lichtbehoefte van tomaat in de winter. Med. Directeur van de Tuinbouw 14, (Juli 1951), no. 7, p. 407
- Keuls, M. Het gebruik van de „Studentiged Range“ in aansluiting op een variansanalyse. Med. voor de Vereniging van Statistiek 3, (Aug. 1951), no. 7. f 0,15
- Floor, J. en P. A. Wezelenburg. Enthoutjes 2. Nieuw opgedane ervaringen met het enten van noten. De Boomkwekerij 6, (Aug. 1951), no. 21, p. 156.
- Elzenga, G. Kruidenoogst. Herba 10, (Aug. 1951), no. 7, p. 79.
- Floor, J. en P. A. Wezelenburg. Enthoutjes 3. Het enten van noten in de zomer. De Boomkwekerij 6, (Aug. 1951), no. 22, p. 159.
- Reinders-Gouwentak, C. A. (Lab. v. Algem. Plantk.), L. Smeets (I.V.T.) en J. M. Andeweg (I.V.T.). Growth and flowering of the tomato in artificial light. 1. Vegetative development. Med. L.H.S. Deel 51, (1951). Verhandeling 2. f 0,20
- Floor, J. en P. A. Wezelenburg. Enthoutjes 4. Het oculeren van noten in de winter. De Boomkwekerij 6, (Sept. 1951), no. 23, p. 172.
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