Standard Specimens for Cultivars: the Way Forward

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Abstract
The Herbarium of the Royal Horticultural Society (RHS) at Wisley has been designating herbarium specimens as Standards for many years. Since the recommendations made in the 1995 edition of the International Code of Nomenclature for Cultivated Plants, there has been a systematic search for Standards in the RHS specimen and image collections. British nurserymen and plant breeders have been contacted and are actively encouraged to supply material and images of new cultivars. Lists of RHS designated Standards are published. A web site has been created which can be searched for the Standards held at Wisley with supporting illustrations of the living plants. The process has highlighted a number of problems which have been overcome and the solutions may help others carrying out similar procedures. It has also emphasised the importance of Standards for the work of horticultural taxonomists, nurserymen and for the correct and stable nomenclature of ornamental plants.

INTRODUCTION

The identification of cultivars, especially those in popular groups such as Penstemon and Papaver, is frequently hampered by inadequate descriptions which are insufficient to distinguish the plant from many other related plants. The original description is often a simple phrase such as “flowers red” or a comparative phrase such as “flowers redder than …” comparing with a cultivar which may or may not remain in the trade. These descriptions could apply to dozens of cultivars and even more if the genus suddenly becomes fashionable. For example, until around fifteen years ago, the plant grown then as Lavatera olbia ‘Rosea’ was the only woody cultivar in general cultivation but within a few years of the launch of the pale pink/white flowered sport, ‘Barnsley’, there were a dozen or more new cultivars, five of which were not dissimilar in their flower colour and some almost indistinguishable. There were no useful descriptions to accompany the publication of their names. Fortunately, the RHS was undertaking a trial of Lavatera at the time and herbarium specimens and detailed descriptions were prepared of all. Already the plants have lost their appeal and whereas a few years ago almost every garden had its Lavatera, now there are far fewer around but at least there are good descriptions and Standards in the RHS Herbarium.

Until the publication of the first International Code for the Nomenclature of Cultivated Plants (Cultivated Plant Code) (Stearn, 1953), there was no advice on the publication of cultivar names, and descriptions, if they existed, were often very brief. There is less excuse nowadays although even the 1995 Cultivated Plant Code still only requires a brief description. Here, Recommendation 22a states that the description should mention features by which a new cultivar differs from allies but, as mentioned earlier, is this sufficient? Despite all the encouragement of the Cultivated Plant Code to produce stability, something more is needed.

This problem has been addressed by individual specialist societies and the relevant International Cultivar Registration Authorities (ICRAs) for some groups of plants. Theoretically there are registers for plants without a specialist ICRA such as woody plants, but in practice, a very large number of new cultivars are not registered at all.
Since the first edition of the Cultivated Plant Code in 1953, there has been a recommendation for the preparation of herbarium specimens of new cultivars. In the 1995 edition, published after the Seattle Symposium for the Taxonomy of Cultivated Plants, this recommendation was formalised and the term “Standard” introduced: “The Standard for a cultivar is the designated herbarium specimen or equivalent element to which a cultivar epithet is attached, whether it is an accepted epithet or a nomenclatural or taxonomic synonym, and which should show the characters upon which its circumscription is based.” (Trehane et al., 1995: Art. 12.1).

Inevitably however, there are certain vital characters which are no longer discernible when a living, three-dimensional plant becomes a dried, pressed, two-dimensional specimen. As these might include characters such as flower or leaf colour, plant habit, foliage texture and scent, all of which may be vital in distinguishing closely related cultivars, detailed descriptions made before pressing are essential. The value of a Standard is increased further if it is augmented with information such as origin or parentage of the plant, and references to original publications or illustrations and any other material that helps to confirm the identity of the plant in the future. It is also useful if the whereabouts of the living plant from which the Standard was prepared is noted, together with dates. Photographs of the living plant are of considerable value and their long-term preservation needs to be carefully considered. Reports of further detailed research and even frozen DNA and the results of analyses, seeds or pollen samples could all be added at a later date. All this information constitutes the Standard portfolio, proposed at the symposium in Seattle (Miller, 1995) and defined in the Cultivated Plant Code as a device in which a Standard and allied information are kept together. This is encouraged by the 1995 Cultivated Plant Code in its Article 12A.1.1.

It is not always practical for all these items to be stored in herbarium folders but with an efficient database, there is no problem in recording all the data as well as the where these items are located so they may be traced with ease.

THE RHS PROCEDURE

Preparation of Standards

The RHS Herbarium at Wisley has been preparing herbarium specimens of new cultivars for many years. For over 30 years, the majority of these have been collected from exhibits which have received RHS awards after exhibition at RHS Flower Shows. At the RHS Garden, Wisley, trials are conducted of many plants for their ornamental value and specimens have been prepared of plants of interest for at least 15 years. Many of these are new cultivars, sometimes grown only under seedling numbers and named by their owners after trial if they proved to be successful.

However, after the revision of the Cultivated Plant Code in 1995, it became important that all known new cultivars be systematically designated as Standards. The first step was to persuade the RHS that it was a vitally important project which necessitated an extra member of staff to check the Herbarium for existing potential Standards. In 1998 a short-term position was created and this was eventually upgraded to a permanent post.

Initially, decisions about how Standards could be recognised retrospectively had to be made. Fortunately, the RHS has a vast archival resource. Each specimen and illustration had to be considered individually but an assessment of the entire specimen, photographic and painting collections in the RHS Herbarium was started, amounting to about 70,000 specimens, 30,000 photographic slides and 3,500 original paintings. For specimens, this is more or less complete although some paintings and photographic slides have been still to be checked as potential Standards. The information - in the International Cultivar Registers, RHS Proceedings, in entry forms of plants exhibited before the RHS Floral Committees, or entered into RHS Trials - was checked. Cultivar Registrars and Committee Secretaries were consulted and monographs were studied. In cases of doubt, whenever possible, the exhibitors were consulted. Most material sent to ICRAs (of which
the RHS has nine) was added to the Herbarium as Standards. This was a very time-consuming process but essential to avoid any possible errors. Records are not always as clear as one might hope and exhibitors of plants are sometimes a little less than honest about the origins of a plant. There are certainly many more potential Standards in the RHS Herbarium which, because of insufficient documentation, have not been designated as Standards. It was considered to be essential to be totally confident on the origin and identity of the plants and sure that there could be no other specimen in existence which might in future be designated a Standard.

Once it was determined that the specimen could validly be designated a Standard, the sheet was stamped “Standard” and the specimen was filed in a labelled, green-edged folder, to distinguish it from botanical type specimens. If an illustration constituted the Standard, it was marked appropriately. Duplicate copies of any relevant information such as descriptions, original descriptions, catalogue entries, registration details, journal articles, awards, references to illustrations, monographs or even living plants were made to include with the specimens as well as in a separate file. All this material and information constitutes the Standard portfolio of a cultivar which may be augmented if more information becomes available. The specimens and images were bar-coded and records were made on the RHS Horticultural Database linking the various elements, making all these details readily accessible.

**Publication of Standards**

Simply preparing and marking specimens or images is not sufficient to create a Standard. A further requirement is the publication of the designated Standard. Several avenues have been tried. At first a booklet was circulated with names and dates and so on and last year, to follow an article in The New Plantsman, a list was prepared (Miller and Grayer, 2001). However, from this year onwards, all new Standards designated by the RHS Herbarium will be published in the annually printed Extracts from the Proceedings of the RHS.

**Website for Standards**

For RHS Standards, a site has been created on the RHS website http://www.rhs.org.uk/research/standards.asp so that anyone in the world is able to discover what Standards have been designated and are held by the RHS Herbarium. Illustrations of the living plants are gradually being added.

**Publicity**

Once this initial work was well underway, the active search began for new cultivars as they were introduced from their originators. Some years ago, a small survey of nurseries and National Plant Collections holders indicated a positive response from all those contacted. The majority felt that the preparation of Standards was a long overdue scheme which would assist with the stabilisation of cultivar names. However, obtaining material is more difficult. An efficient method of systematically obtaining samples of new cultivars as they are introduced into the trade in United Kingdom is required but is not easy. Mail shots through to all nurseries listed in the RHS Plant Finder is partially successful for a short period but constant reminders are essential. Current catalogues and horticultural literature are scanned. A meeting at Wisley for nurseries exhibiting at the Wisley Flower Show brought some results but is limited to the small number of exhibitors attending. Articles have been written and talks given to specialist societies, the National Council for the Conservation of Plants and Gardens (NCCPG), ICRAs and at other meetings (Miller, 1999; Miller and Grayer, 1999).

In general there is great theoretical interest in the horticultural world. In practice, it appears that a targeted, personal contact has the most effect even though this is very time-consuming.

Finally, everyone within the RHS dealing with award plants, registered plants and plants in general, is very aware of the need to highlight new cultivars and especially within
trials. So far we have designated nearly 2,500 Standards of both old and new cultivars.

TOPICS FOR CONSIDERATION

This work at Wisley has raised a number of questions, some of which may be worthy of further discussion or may assist others involved in the process of preparing and designating Standards.

Standards and Statutory Bodies

It is not helpful that, according to Article 32.7 of the 1995 Cultivated Plant Code, “The Standard for a cultivar whose epithet is established under the provisions of a statutory plant registering authority is the documentation published and/or otherwise held by the issuing authority which makes the tests made to support recognition of the new cultivar”. Several specimens at Wisley, received before the plant was submitted to the Plant Breeders’ Rights Office for testing, have been designated as Standards. Many others were received directly from the originator of the plant but at present cannot legitimately be designated Standards. Surely a specimen and illustration, with detailed description of origin, colour references, descriptions and so on, details of which are freely available on a website, are more useful than a written description held in an office. However, could the situation arise where both the statutory documentation and the specimens become the Standard? There needs to be more communication between the relevant organisations.

Identifying Which Cultivars are New

A certain amount of investigation is often required before a note in a nursery catalogue can be accepted. Many plants described as “New Introductions” are simply new to the nursery or to the particular edition of the catalogue. Related to this point is the fact that the plants may be new to the country but acquired from another where they are well established. It would be extremely useful in the case of cultivars new to the UK to record their characteristics before they become freely available in the trade. Designating them as Standards, even though there is no possibility of a Standard in their county of origin, could, however, be fraught with problems as confusion of identity at any stage of the importation procedure is not impossible. A linked, searchable website, could resolve some of these problems. Is there merit in creating a specific category for these plants?

Validity of Names of Standards

In some instances, Standards have been made of plants which are launched onto the market with invalid names (e.g. *Polemonium* ‘Sonia’s Bluebell’ launched at Chelsea Flower Show in 2000 whose name ends with the common name of another genus) which become accepted by the trade and the public. Others have names which are not validly published or published in ephemeral but widely circulated and dated promotional literature. At the RHS, the view has been taken that although the epithet may not be correctly published or the name correctly formed, if the cultivar is in circulation, it is better to have a Standard with a dubious name for reference than none at all.

Despite the best efforts of the Cultivated Plant Code, ICRAs and everyone else connected with the creation of cultivar names, names are re-used and it is possible for there to be Standards of two plants with the same name. At Wisley there have been examples of this among chrysanthemums and it was considered important to preserve specimens of both. Very careful details of date and description are obviously essential in these instances.

Duplication of Standards

How can the duplication of Standards be avoided? So far at Wisley, only specimens where there is absolutely no doubt of provenance have been designated but others may have a more cavalier attitude. Replies to a circulated questionnaire indicated that not everyone has the same idea as to how to define a Standard. A world wide website could help avoid this problem.
Digital Images of Standards

Is a digital image acceptable as a Standard? Manipulation of such images is simple but this subject may need serious consideration with the rapidly growing use of digital cameras. Perhaps such an image is better than nothing, especially if it might be the only record, as long as it is backed up by references to a recognised Colour Chart at the very least.

Routine Preparation of Standards for All New Cultivars

In replies to a questionnaire circulated to ICRAs and others, there was a very mixed response to the question as to whether or not Standards should be compulsory for cultivar registration. Many felt that in an ideal world there should be a Standard for every new cultivar but that it would be impossible to achieve and more regulation would deter even the registration of a name. Not all plants are easy to press and many Registrars would not have the resources to obtain, prepare and store specimens and/or images. Nurseries and breeders are naturally more interested in raising and marketing their plants than registration. Is there a commitment among the world of horticulture to provide the resources of finance, space and time for a compulsory system?

THE WAY AHEAD

The following are a few suggestions in which the concept of Standards might be developed.

The Cultivated Plant Code could be strengthened and some articles about Standards and their publication adapted and made clearer. Stronger, clearer advice on what constitutes an ideal Standard and the descriptive details necessary to accompany a specimen would be useful. Links with statutory bodies also need to be considered.

Methods for raising the consciousness of the value of Standards and gaining the acceptance of the concept among growers, breeders, nurserymen and horticultural institutions need to be found.

ICRAs need to be encouraged to welcome images and specimens of registered plants and methods found to help the Registrars to process them.

Consideration should be given to the value of making the preparation of Standards for cultivars a requirement for naming all new cultivars in the future. As this would be a major step, the implementation, if agreed, would need careful planning.

The communication between the statutory bodies involved with plant registrations and the Cultivated Plant Code needs to be developed.

Methods of developing linked, searchable databases and a website should be explored to enable the easy search for the location of Standards and their descriptions, the avoidance of duplication and the encouragement of their use.

CONCLUSION

The preparation and conservation of Standards and their portfolios and the dissemination of the information is vital to assist botanists and horticulturists in their work and to help to create stable nomenclature in cultivated plants in the future. A vision of the future when all information on Standards can be centralised with one internationally accessible website, linking all relevant herbaria and allowing a single search to reveal the location of the Standard and description for any particular cultivar, may be idealistic but is not impossible with the commitment of all concerned. The RHS is one of several organisations taking a lead.

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