Reflection on the Space for New Floricultural Crops in Agronomy Curricula in Brazil

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Abstract
Considering the relevance of the flowering plant Brazilian biodiversity and the paucity of academic resources dedicated to it, this article proposes a reflection on the space curricula and syllabi should allow for the introduction of new floricultural crops. A case study on the history of floricultural education in the Federal University of Viçosa serves as an illustration for this reflection, showing the emphasis given to different crops in the last decade and the courses offered. Conducting a survey with agronomy students, raised that: a) the crops they find important to study are not usually included in the adopted syllabus; b) the criteria they find most important when choosing species to cultivate are their potential market share and how adaptable the plant is to the cultivation environment, and c) they are open to cultivating new crops to the market. This article proposes alternatives to tackle the problem pointed out in its title. Amongst these figure not only the inclusion of new crops in the curricula, but the needed emphasis on the guiding principles for the cultivation of different plant groups and the knowledge of the market at which each crop aims.

INTRODUCTION
Brazilian biodiversity and its myriad of plant species with ornamental potential are well known nationally and internationally. Hence it becomes imperative to consider how prepared agronomists – the ones in charge of ornamental horticulture in Brazil – are to tackle the inclusion of new floricultural crops in the repertoire of horticulturists, nurseries and technical personnel.

Considering the relevance of the topic for Brazilian economy and the paucity of academic resources dedicated to it, this article proposes a reflection on the space curricula and syllabi should allow for the introduction of new floricultural crops, based on the experience of the Federal University of Viçosa, Minas Gerais State, Brazil.

In most cases agronomy curricula offer courses on floricultural crops, either as mandatory or optional. However, the inclusion of floriculture in undergraduate programmes is recent in many cases, and course syllabi frequently lack time to broach crops other than those of greater economic expression as roses, chrysanthemums, gladioli, and lilies. Another drawback is the scarcity of literature in Portuguese on plants whose space in the market grew more recently and still figure in few research projects. Very rarely researchers have published issues on new floricultural crops in graduate instruction subject (Anderson, 2002). However, scientific articles related with horticulture teaching methodology, student recruitment factors and floriculture plant production techniques have been published (Bradley et al., 2000; Arnold et al., 2001; Mackay et al., 2001). A case study on the history of floricultural education in the Federal University of Viçosa (UFV), with its long tradition, serves as an illustration for this reflection.

UFV receives 210 new agronomy students every year and their curriculum is spelt out in the Course Catalogue along those of all other undergraduate programmes offered.
The 1985 Course Catalogue (UFV, 1985) presents the subject “FIT 480 - Floriculture, Gardening and Landscape Design” as mandatory for all agronomy students entering that year. The same is valid in the catalogues of the following years, until 1999. In that period, the number of enrolled students per term varied between 60 and 100. In 2000 FIT 480 became an optional subject and has maintained, even then, a number around 50 enrolled students per term.

From 1985 to 2002, FIT 480 followed the same syllabus, which attributes half of its class hours to Floriculture and half to Landscape Design, with occasional variations of length, content, and order. During that period the floriculture topics covered were:
- General aspects of Floriculture;
- Floriculture economic importance;
- Roses;
- Chrysanthemums;
- Orchids;
- Gladioli and Lillies;
- Other cut flower crops.

The emphasis, with a larger time allotment, was always on the production of roses and chrysanthemums, covering in detail the most relevant aspects of the cultures, such as propagation, fertilisation, pest and disease control, crop and post-harvest management. As to the variations included in some of the taught terms some examples are the cultivation of bromeliads and impatiens.

Although various other plant groups and species are studied and researched by the four lecturers involved in the course, time constraints pressed for the mentioned emphasis. These are the crops of greater commercial importance in the national market and represent different plant groups as to cultivation requirements. As such it is expected that their study will serve as a base for the study of other similar species.

In 2003 two new courses started, changing the structure and syllabus of FIT 480 into an introductory subject to floriculture and landscape design. The flower crops referred above are now taught at the newly created FIT 481 – Floriculture, where twice as much time is available – 60 class hours per term. A second course, FIT 482 – Landscape Design and Ornamental Plants, expands on the practice of landscape design on and plants for landscape use, including topics on the management and cultivation in nurseries.

MATERIAL AND METHODS

A survey was conducted with 63 students enrolled in FIT480 for the first term, 2003, who had been exposed to the new syllabus, hence not receiving any detailed instruction regarding specific cultures.

This survey asked students:
1. Name three types of plants for ornamental use you consider important studying;
2. Supposing you are a floriculturist, what importance would you give to the criteria below when deciding for a new plant to cultivate
   a. Plant adaptability to the production site
   b. Plant origin (native or exotic)
   c. Commercial potential
   d. Present sales volume
   e. Being a novelty in the market
   f. Other.
3. Which one of the criteria above do you value as most important?
4. Would you consider investing in a plant unknown to your local market?
RESULTS AND DISCUSSION

The rose and chrysanthemum cut flowers compose the largest slice of preferences, with 29% of responses. However, some of the crops they find important to study are not usually included in the adopted syllabus, including orchids (19%), bromeliads (11%), landscape plants (25%) and other tropical species (2%) (Fig. 1). The criteria they find most important when choosing species to cultivate are their potential market share and how adaptable the plant is to the cultivation environment (Figs. 2 and 3). The surveyed students are open to cultivating crops new to the market (Fig. 4). This article proposes alternatives to tackle the problem pointed out in its title. Amongst these figure not only the inclusion of new crops in the curricula, but a much needed emphasis on the guiding principles for the cultivation of different plant groups and the knowledge of the market at which each crop aims.

CONCLUSIONS

This study gives base to suggest that, although the study of traditional flower crops is still important and valued by students, new crops would be well received if included in courses, provided their space in the market and cultural requirements are adequate.

As observed at Federal University of Viçosa, time is a major factor when preparing course syllabi. Hence, the changes needed for the inclusion of new crops require study. Emphasis on the guiding principles for the cultivation of different plant groups and the knowledge of the market at which each crop aims are, at a first moment, the solutions proposed by the authors and adopted at that University.

Literature Cited

Figures

Fig. 1. Types of plants for ornamental use you consider important studying.

Fig. 2. Importance given to criteria when deciding for a new plant to cultivate.
Fig. 3. Most important criterion when deciding for a new plant to cultivate.

Fig. 4. Question in the survey: Would you consider investing in a plant unknown to your local market?