

This is an update of the 1972 edition and contains information about 356 culture collections in 52 countries. The directory of culture collections contains information on: address, curator, staff, main interests and functions and numbers of cultures of algae, bacteria, fungi, lichens, protozoa, tissue cultures, viruses (animal, bacterial, plant) and yeasts.

The catalogue also contains lists of valid names (Genus and species) for the organisms named in the collections.

The directory and catalogue will be useful to researchers and commercial interests in locating *bona fide* sources of microorganisms.

R. A. DATE

### BOOK REVIEW

*The Grasses of Southern Queensland* by J. C. Tothill and J. B. Hacker and published by University of Queensland Press, St. Lucia 1983. \$A30.00.

This 475 page hard-backed book is a revision and major extension of the earlier invaluable 1973 book 'The Grasses of Southeast Queensland' by these authors. It includes all Queensland south of latitude 21° and records 140 genera and 584 species of grasses. This represents an increase of 36% in the number of genera and 67% in the number of species recorded in the previous work.

The book is an illustrated field guide to most (82%) of the grasses of Queensland. The book should have wide appeal to graziers, agriculturalists, naturalists, students and others interested in identifying and learning about the grasses of Queensland.

The format follows the previous work with Part I describing the vegetation, The Eastern Division by J. C. Tothill and The Western Division by W. H. Burrows. The regions comprise 26 geographic-vegetational units from coastal strand and foredunes to forblands of Western Queensland. These units are described in relation to the major tree, grass and forb components with a short agronomic comment and are illustrated with 14 photographic plates. Table 1 gives the distribution of grasses with respect to the vegetation units.

Part II comprises a description of the grass plant, pictorialized key and a detailed dichotomous key to generic level. The descriptive account, supported by stylized illustrations by J. B. Hacker, emphasizes the variation and taxonomic significance of the floral and vegetative organs, and is an invaluable aid to those not familiar with the peculiar characteristics of the grass family. The keys, supported by a useful glossary, are based on relatively simple characteristics and should be useable by most interested readers.

Part III contains detailed descriptions of 141 species. Information on occurrence and use is included. Following are keys to all species in the genera. Illustrations are on the opposite page.

In some instances, e.g., *Cynodon dactylon*, the detailed description section has not been updated to accommodate revised keys.

This book is a timely extension and updating of the previous work, and I am sure is a welcome addition to many bookshelves.

W. J. SCATTINI

### NEW RELEASES OF PASTURE PLANTS

The following new pasture plant cultivars suitable for use in the subtropics and tropics have recently been released.

The cultivar descriptions have been extracted from the "Register of Australian Herbage Plant Cultivars" which is published in the Journal of the Australian Institute of Agricultural Science. The Registrar of cultivars is Dr. R. Oram, CSIRO, Division of Plant Industry, P.O. Box 1600, Canberra, A.C.T. 2601.

**LEGUMES****Lucerne***Medicago sativa* L. (lucerne)**cv. Sequel**

(Reg. No. B-8a-18)

*Origin*

Sequel was bred by the CSIRO Division of Tropical Crops and Pastures and the Queensland Department of Primary Industries in a collaborative program. The breeders were R. J. Clements, J. W. Turner, J. A. G. Irwin, P. W. Langdon, R. A. Bray, A. C. Brooks and C. J. Thomson. The name "Sequel" is an acronym for "S-E Queensland Lucerne".

Fifty per cent of the background genotype for Sequel was derived from a Siro Peruvian line selected for resistance to crown rot, *Colletotrichum trifolii* Bain et Essary (4), and 50% from a line of CUF 101 selected for resistance to root rot, *Phytophthora megasperma* Drechs. f. sp. *medicaginis* Kuan et Erwin. CUF 101 also carries resistance to the spotted alfalfa aphid, *Therioaphis trifolii* (Monell) f. *maculata*, the blue-green aphid, *Acyrtosiphon kondoi* Shinji, and the pea aphid, *A. pisum* Harris. Progeny from crosses between the two parent lines were screened for resistance to both diseases and to the spotted alfalfa aphid and the blue-green aphid, and selected plants were paircrossed. A second cycle of selection and recombination was conducted to intensify the levels of resistance (1). All selection was carried out in glasshouses and controlled environments. Inbreeding depression was minimised by using large numbers of parents in each crossing cycle, by using within-family selection, and by avoiding intense selection pressure in the first selection cycle. Sequel is based on about 150 multiple resistant plants from the final cycle of selection.

Submitted for registration jointly by CSIRO Division of Tropical Crops and Pastures and the Queensland Department of Primary Industries, CSIRO Division of Tropical Crops and Pastures will maintain breeders' seed. Recommended for registration by the Queensland Herbage Plant Liaison Committee. Registered March 1985.

*Morphological description*

Sequel is similar in appearance to Siro Peruvian and CUF 101. It is more erect than Hunter River, with larger, more fleshy stems, broader leaves, less densely branched crowns and larger seeds. There are approximately 345 000 seeds per kg.

*Agronomic characters*

Sequel was developed as a replacement for Siro Peruvian in the Queensland subtropics, where diseases (3) and aphids (5,6) are known to reduce stand life. It can be distinguished from previously registered cultivars by its winter activity, which is similar to that of Siro Peruvian, and its high levels of resistance to diseases and aphids.

Sequel has *Phytophthora* resistance similar to that of Trifecta, significantly greater than that of CUF 101 and Siriver, and much greater than that of Siro Peruvian and Hunter River (1). About two-thirds of the plants are resistant. It has *Colletotrichum* resistance lower than that of Arc, equal to that of Trifecta and much greater than that of Siro Peruvian, CUF 101, Hunter River and Siriver (1). About half the plants are resistant.

Resistance of Sequel to the spotted alfalfa aphid is equal to that of CUF 101 and Siriver, similar to or greater than that of Trifecta, and much greater than that of Hunter River (1). Its resistance to the blue-green aphid is lower than that of Siriver, similar to that of CUF 101 and Trifecta, and greater than that of Hunter River (1,8). Its pea aphid resistance is similar to CUF 101 and Siriver, similar to or greater than that of Trifecta, and much greater than that of Hunter River (1).

Sequel is a highly winter active cultivar. It is high yielding, particularly where its disease resistance gives it an advantage. During the first two years of two irrigated trials

in Queensland, Sequel outyielded Siro Peruvian by 16% at Biloela and 29% at Gatton, and outyielded CUF 101 by 14% at Biloela and 20% at Gatton (2,7).

In the Biloela trial it was the highest yielding of seven cultivars tested, and at Gatton it was outyielded only by Trifecta (non-significantly) among 19 cultivars tested. Because of its combined resistance to root and crown rots and three aphid species, Sequel should be more persistent and productive than other highly winter active cultivars wherever these diseases and pests are prevalent. At Gatton after two years, Sequel was equal to Trifecta in persistence and significantly more persistent than Siro Peruvian and Hunter River (7), and at Biloela it was significantly more persistent than Siro Peruvian (Trifecta and Hunter River were not included in the Biloela trial) (2). Its field resistance to leaf diseases (*Stemphylium* sp., *Leptosphaerulina* sp.) was similar to that of the other highly winter active cultivars in the Gatton trial (7).

#### REFERENCES

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4. IRWIN, J. A. G., LLOYD, D. L., BRAY, R. A. and LANGDON, P. W. (1980)—Selection for resistance to *Colletotrichum trifolii* in the lucerne cultivars Hunter River and Siro Peruvian. *Aust. J. Exp. Agric. Anim. Husb.* **20**: 447–451.
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### Annual Medic

*Medicago truncatula* Gaertn. (barrel medic)

cv. **Sephi**

(Reg. No. B-9a-10)

#### Origin (1)

Collected by the late Dr Joesph (Sephi) Katznelson and Dr Eli Putievsky near Mt Meron, Upper Galilee, Israel in 1969. Coded as NYM 62 and forwarded to the Department of Agriculture, South Australia in 1976. The line, designated SA10419, was grown in the Parafield Plant Introduction Centre nursery in 1977. Two plants were selected by E. J. Crawford as founders of SA11959, a line which proved to have aphid resistance during screening by E. T. Kobelt at Northfield Research Laboratories in 1979.

Multiplication of this line by M. J. Mathison revealed the presence of some progeny with a different leaf marking. This component was rogued out, but continued to arise in subsequent generations. Seed of the partially rogued line, designated SAD6297, was distributed widely for testing in New South Wales, Victoria, Queensland, Western Australia and South Australia from 1980. Recent progeny tests carried out by A. W. H. Lake indicate that one or both of the two original plants were heterozygous for a recessive blotch marker. There is, however, no evidence of segregation for any other major character (1).

Breeder's seed is produced from SAD 6297 by the South Australian Department of Agriculture. Recommended for registration by the South Australian Herbage Plant Liaison Committee. Registered December 1984.

#### Morphological description (1)

The cultivar Sephi is a mixture of two components. These components are morphologically indistinguishable except for a difference in markings on the abaxial surfaces of the leaflets. Eighty per cent of the plants have a lighter green "watermark" blotch mostly edged with brown on the distal part of the leaflets. The remaining 20% have a brown blotch on the mid-lower part of the leaflets. Both leaf markers disappear later in the life of the plant, and may not be expressed in the warmer months of the year.