CATALOGUE – IV

MINIMUM DESCRIPTORS OF CASHEW GERMPLASM ACCESSIONS

Nayak MG, Mohana GS, Bhat PS, Saroj PL and KRM Swamy

ICAR - DIRECTORATE OF CASHEW RESEARCH
Puttur - 574 202, D.K., Karnataka, India

CATALOGUE – IV

MINIMUM DESCRIPTORS OF CASHEW GERMPLASM ACCESSIONS

Nayak MG, Mohana GS, Bhat PS, Saroj PL and KRM Swamy

ICAR - DIRECTORATE OF CASHEW RESEARCH

Puttur -574 202, D.K., Karnataka, India

Year : December, 2014

Published by : Prof. P. L. Saroj, Director

Authors : Dr. M.G. Nayak, Principal Scientist (Horticulture)
Dr. Mohana, G.S., Senior Scientist (Genetics and Cytogenetics)
Dr. P.S. Bhat, Principal Scientist (Agricultural Entomology)
Prof. P.L. Saroj, Director, DCR, Puttur
Dr. Swamy, K.R.M., Retired Principal Scientist (Horticulture)

Design and Layout : Dr. Mohana, G.S.
Photo Credit : Ravishankar Prasad
Data Compilation : Ravishankar Prasad & K. Seetharama
Word Processing : R. Muthuraju

Printed at : SADGURU SCREENS (Multicolour Offset Printing & Screen Printing)
113/2, 60 Feet Road, 4th Stage,
Industrial Town Rajajinagar, Bangalore -560 044
Tel: 080-23307200, 23307202. Mobile : 99800 90117
E-mail: sadguruscreens@gmail.com

Dr. N.K. KRISHNA KUMAR
Dy. Director General
(Horticulture)

Tel : 91-11-25842068 (Off)
Fax : 91-11-25841976
E-Mail : ddghort@icar.org.in
ddghort@gmail.com
Telex : 031-62249 ICAR IN

INDIAN COUNCIL OF AGRICULTURAL RESEARCH
Division of Horticulture
Krishi Anusandhan Bhawan - II
New Delhi - 110 012

FOREWORD

Cashew which has originated in Brazil was brought to India by the Portuguese in 1498 and it remained as wild tree for centuries. During early fifties of last century, ad hoc efforts were made to bring it under cultivation. However, systematic research efforts were started only in early seventies. The National Research Center for Cashew (now upgraded to Directorate of Cashew Research), Puttur, Karnataka established in 1986 was given the priority programme of establishing National Cashew Field Gene Bank (NCFGB) and also a mandate to collect and conserve the available germplasm. So far, a total of 539 clonal accessions have been collected and conserved in NCFGB of which, 476 accessions have been registered with NBPGR, New Delhi with national collection numbers (IC Nos.).

Characterization of cashew germplasm has been taken up at Directorate of Cashew Research using the "Cashew Descriptors" of the Bioveristy International, Rome. The first set of 56 accessions planted in 1986 have been characterized and published in Catalogue of Minimum Descriptors of Cashew Germplasm Accessions-I in 1997. The second set of 97 accessions planted in 1987 and 1988 have been characterized and documented in the Catalogue of Minimum Descriptors of Cashew Germplasm Accessions-II published in 1998. The third set of 102 accessions planted in 1989 and 1990 have been characterized and documented in the Catalogue of Minimum Descriptors of Cashew Germplasm Accessions-III published in 2000.

The present publications represent fourth (108 accessions characterised during 1991to 1997) and fifth set (115 accessions characterised during 1998 to 2003) at NCFGB at Puttur. I appreciate the efforts made by the scientists and the Director, DCR, Puttur in bringing out this catalogue. I hope this publication will help users and scientists engaged in cashew improvement and in basic research programmes.

New Delhi
November, 2014

Dr. N.K. KRISHNA KUMAR

Prof. P. L. Saroj
Director
DCR, Puttur

Email : dircajures@gmail.com
Phone : 08251-231530,
230902, 236490
Fax : 08251–234350
Website : www.cashew.res.in

PREFACE

Directorate of Cashew Research is the nodal agency for cashew research in the country and since its establishment, vegetatively propagated material of cashew is collected, evaluated and conserved in the National Cashew Field Gene Bank (NCFGB) at Puttur, Karnataka and in the Regional Field Gene Banks of All India Coordinated Research Project Centers in the country. The germplasm accessions conserved in the NCFGB at DCR, Puttur include diverse types such as varying plant vigour and canopy, high yield, bold nut, purple pigmented, Cashew Nut Shell Liquid (CNSL) free, high shelling percentage, cluster bearing, big apple and early maturity types. Three wild species namely, Anacardium pumilum, A. othonianum and A. microcarpum are also conserved in addition to 23 exotic collections.

It is worthwhile to mention that utilization of these germplasm has culminated in release of 28 varieties and about 155 germplasm accessions have been utilized for Hybridization programs resulting in 13 hybrids. This exemplifies the importance of germplasm in crop improvement programs. With this in view, the Directorate had brought out three germplasm catalogues containing evaluation of data on 255 accessions. The current publication represents 108 accessions characterised during 1991-1997 at the Directorate. It is hoped that this catalogue will be useful to researchers and other stakeholders who are engaged in improvement of cashew. Scientists of the Directorate involved in bringing out this catalogue deserve rich appreciation. The efforts made by all workers in collection and maintenance of these germplasm at the Directorate are also appreciated.

Puttur
December, 2014

Prof. P. L. Saroj

CATALOGUE OF MINIMUM DESCRIPTORS OF CASHEW

(*Anacardium occidentale* L.)

GERMPLASM ACCESSIONS-IV

Introduction:

Germplasm collection, conservation, evaluation and subsequent utilization assumes a greater significance in any crop improvement programme and cashew is no exception to this. As new accessions are collected, it is important to characterize them so that breeders can incorporate them in the ongoing breeding programmes. The most immediate priority in cashew is to catalogue the available germplasm and identify the duplicates. For this, "Cashew Descriptors" compiled and published by IBPGR (presently the Bioversity International) in 1986 (IBPGR, 1986) was referred and minimum descriptors were applied to cashew accessions maintained at National Cashew Field Gene Bank (NCFGB) at Puttur, Karnataka. Preliminary evaluation and characterization were done after six annual harvests for accessions that were planted in 1986 (56 accessions), 1987 (30), 1988(67), 1989 and 1990 (102). Subsequently, the "Catalogue of Minimum Descriptors of Cashew (*Anacardium occidentale* L.) Germplasm Accessions-I, II and III" were published (Swamy et.al., 1997, 1998 & 2000).

The present catalogue (fourth in the series) contains characterization data for 108 accessions planted during the years starting from 1991 to 1997 at NCFGB at Puttur (Lat. 12.77o N; Long. 75.22o E; Elevation 90 m from MSL). The accessions were grown by adopting recommended package of practices. The data fields (68) recorded are listed in Table 1 with corresponding numerical category (code) of the character as shown in the IBPGR "Cashew Descriptors". All characters were measured or observed as outlined in the descriptor list except flowering duration, flowering intensity, apple to nut ratio and cumulative yield / plant (data fields 60, 61, 62 and 68, respectively). Colour of mature cashew apple of all accessions was recorded with the help of "RHS colour chart" (Anonymous, 1995). The summaries of characters measured are presented in Table 2.

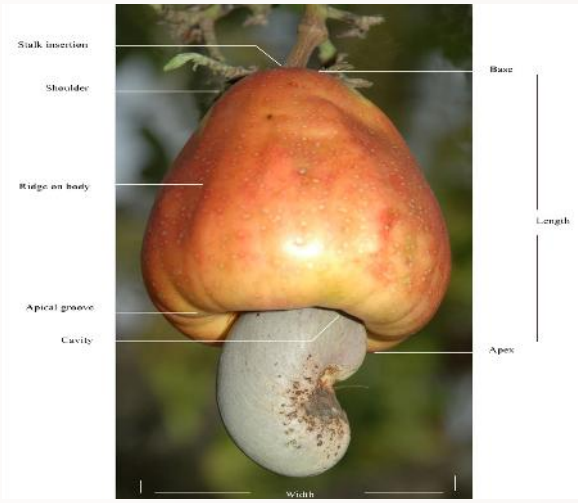
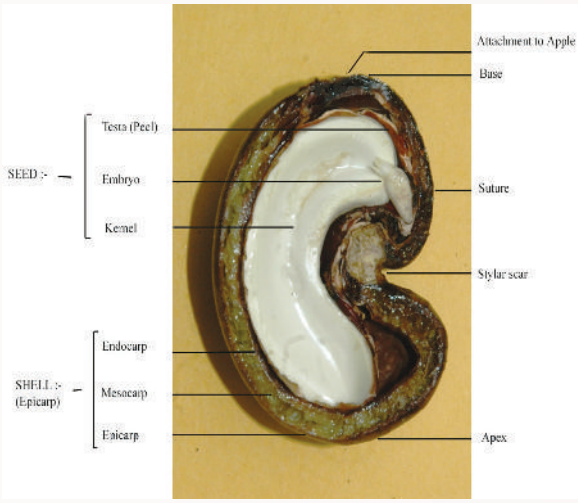


Fig. 1 and 2. Cashew apple with nut (Above) and longitudinal section of Cashew nut (below)



The information furnished in this catalogue will be useful to breeders and basic researchers in identifying germplasm as per their need.

Background information of Germplasm Collection

A large number of new, underscribed germplasm of cultivated cashew (*Anacardium occidentale* L.) had been collected in India (Bhaskara Rao and Swamy, 1994). The early attempts of germplasm collections were made during the early fifties with the sanctioning of Ad-hoc schemes in the then composite States of Madras, Travancore, Cochin and Bombay. The research stations started under these Ad-hoc schemes in Kerala (Kottarakkara), Karnataka (Ullal), Tamil Nadu (Vridhachalam), Anhdra Pradesh (Bapatla) and Maharashtra (Vengurla) took up the programme of collection of locally available elite plants for evaluation and further selection. These were the initial attempts in collection of cashew germplasm in India. Many of the other research centers which were established subsequently have collected germplasm from these centers namely, Bapatla, Kottarakkara, Ullal, Vridhachalam and Vengurla. While making the initial collections of germplasm, these centers have confined their survey mainly to the respective States and hence they represent the local germplasm available in those States.

Since the inception of All India Coordinated Spices and Cashew Improvement Project in 1971, Central Plantation Crops Research Institute (CPCRI), Regional Station, Vittal, also took up the programme of cashew germplasm collection which mainly consisted of the seedling progenies of collections which were available at Bapatla, Vridhachalam, Vengurla, Anakkayam and a few collections made locally from Karnataka. Subsequent to the establishment of National Research Centre for Cashew (NRCC) at Puttur (Karnataka), the germplasm collection through seeds has been discontinued and only the vegetatively propagated material is being collected and conserved in the National Cashew Field Gene Bank (NCFGB). A coordinated approach was brought in the cashew germplasm collection through joint surveys by teams consisting of scientists of NRCC and the All India Coordinated Research Project on Cashew (AICRP on Cashew) centers of the respective States.

In the NCFGB, so far 539 clonal accessions which were collected from 1986 to 2014 have been planted @ 6 softwood grafts per accession at spacing of 6 m x 6 m for evaluation and characterization. The evaluated accessions (478) have been planted @ 4 grafts per accession by adopting a closer spacing of 4 m x 4m and are being maintained as active collections in the field. Similarly, Regional Cashew Gene Banks (RCGB) have also been established at AICRP on Cashew centers such as Vengurla (bold nut collections), Bhubaneswar (cluster bearing collections), Madakkathara (dwarf types) and Chintamani (collections from plain areas of Karnataka).

Table 1: Descriptors listed with data field number, descriptor name and descriptor code from IBPGR

Data Field	Descriptor	IBPGR Code
01	Accession number	1.1
02	Donor name	1.2
03	Donor identification number	1.3
04	Scientific name	1.5
05	Type of maintenance (1 Vegetative 2 Tissue culture)	1.11

Data Field	Descriptor	IBPGR Code
06	Age of tree (years)	3.4
07	Tree habit	4.1.1
08	Internode length of twig (cm)	4.1.2
09	Leaf shape	4.1.3
10	Tree height (m)	6.1.1
11	Tree spread (m)	6.1.2
12	Cracks on trunk bark	6.1.3
13	Crotch angle of main branches	6.1.5
14	Ease of peeling bark from twigs	6.1.6
15	Extension growth of twigs (cm)	6.1.7
16	Branching pattern	6.1.8
17	Twig diameter (mm)	6.1.9
18	Number of leaves per twig	6.1.10
19	Colour of young leaves	6.1.11
20	Colour of mature leaves	6.1.12
21	Odour of leaves	6.1.13
22	Leaf margin	6.1.14
23	Leaf apex shape	6.1.15
24	Leaf size (cm2)	6.1.16
25	Brittleness of leaf	6.1.17
26	Angle of leaf petiole	6.1.18
27	Leaf cross-section	6.1.19
28	Season of flowering	4.2.1
29	Inflorescence shape	4.2.2
30	Flower colour	4.2.3
31	Mature cashew apple colour	4.2.4
32	Cashew apple shape	4.2.5
33	Colour of mature nut shell	4.2.6
34	Nut shape	4.2.7
35	Nut weight (g)	4.2.8
36	Colour of boot leaf	6.2.1
37-1	Inflorescence size – Length (cm)	6.2.2
37-2	Inflorescence size – Width (cm)	6.2.2
38	Compactness of inflorescence	6.2.3
39	Type of inflorescence branching	6.2.4

Data Field	Descriptor	IBPGR Code
40	Sex ratio	6.2.6
41	Secondary flowering	6.2.7
42-1	Size of cashew apple – Length (cm)	6.2.8
42-2	Size of cashew apple – Width (cm)	6.2.8
43	Weight of cashew apple (g)	6.2.9
44	Shape of cashew apple base	6.2.10
45	Ridges on cashew apple	6.2.11
46	Cashew apple apex	6.2.12
47	Grooves on apex of cashew apple	6.2.13
48	Cavity of apex of cashew apple	6.2.14
49	Skin of cashew apple	6.2.17
50	Attachment of nut to apple	6.2.24
51	Shape of nut base	6.2.25
52	Suture of nut	6.2.26
53	Flanks of nut	6.2.27
54	Stylar scar on nut	6.2.28
55	Shape of nut apex	6.2.29
56	Relative position of suture and apex	6.2.30
57	Shell thickness (mm)	6.3.31
58	Uniformity of shell thickness	6.2.32
59-1	Cashew nut dimension – Length (cm)	6.2.33
59-2	Cashew nut dimension – Width (cm)	6.2.33
59-3	Cashew nut dimension – Thickness (cm)	6.2.33
60	Flowering duration (days)	11.2.1
61	Flowering intensity (%)	11.2.2
62	Apple to nut ratio	11.2.3
63	Shelling percentage	4.3.1
64	Kernel weight (g)	4.3.2
65	Attachment of peel to kernel	4.3.3
66-1	Kernel dimension – Length (cm)	6.3.1
66-2	Kernel dimension – Width (cm)	6.3.1
66-3	Kernel dimension – Thickness (cm)	6.3.1
67	Cotyledonary grooves	6.3.2
68	Cumulative yield (kg/tree)	11.1

Table 2: Summary of the characters from 108 accessions

Field	Character name	Descriptor state		Numberof accessions
07	Tree habit	3	Upright and compact	20
		5	Upright and open	75
		7	Spreading	13
08	Internode length of twig	3	Short (< 1.0 cm)	11
		5	Medium (1.0 – 2.0 cm)	95
		7	Long (>2.0 cm)	2
09	Leaf shape	1	Oblong	4
		2	Obovate (club-shaped)	44
		3	Oval	60
10	Tree height	3	Dwarf (< 2.5 m)	0
		5	Semi tall (2.5 – 4.0 m)	27
		7	Tall (> 4.0 m	81
11	Tree spread	3	Low (< 3.0 m)	0
		5	Intermediate (3.0 – 6.0 m)	60
		7	High (> 6.0 m)	48
12.	Cracks on trunk bark	0	Absent (Smooth)	0
		+	Present (Rough / Scaly)	108
13.	Crotch angle of main branches	3	Acute (< 90)	108
		7	Obtuse (> 90)	0
14.	Ease of peeling bark from twig	3	Difficult	14
		7	Easy	94
15	Extension growth of twigs	3	Short (< 9.0 cm)	24
		5	Intermediate (9.0 – 19.0 cm)	63
		7	Long (> 19.0 cm)	21
16.	Branching pattern	1	Extensive	76
		2	Intensive	32
17.	Twig diameter	3	Thin (< 4.5 mm)	0
		5	Intermediate (4.5 – 9.0 mm)	108
		7	Thick (> 9.0 mm)	0
18.	Number of leaves / twig	3	Low (< 9)	14
		5	Medium (9 - 19)	94
		7	High (> 19)	0
19.	Colour of young leaves	1	Red	16
		2	Yellow Red	76
		3	Green Yellow	16

Field	Character name	Descriptor state		Numberof accessions
		4	Purple	0
20	Colour of mature leaves	1	Light green	0
		2	Green	100
		3	Dark green	8
		4	Purple	0
21.	Odour of leaves	1	Mango-like	108
		2	Turpentine-like	0
22.	Leaf margin	1	Smooth	90
		2	Wavy	18
23.	Leaf apex shape	1	Pointed	10
		2	Rounded	79
		3	Indented (slight notch)	19
24.	Leaf size	3	Small (< 60 cm2)	3
		5	Intermediate (60 –120 cm2)	81
		7	Large (> 120 cm2)	24

07: Tree Habit

3 Upright and Compact 5 Upright and Open 7 Spreading

09: Leaf Shape

1 Oblong 2 Obovate 3 Oval

16: Branching Pattern

1 Extensive 2 Intensive

19: Color of young leaves

1 Red 2 Yellow Red 3 Green Yellow 4 Purple

Field	Character name		Descriptor state	Numberof accessions
25	Brittleness of leaf	3	Leathery	108
		7	Brittle	0
26	Angle of leaf petiole relative to stem	3	Acute (< 90)	108
		7	Obtuse (>90)	0
27.	Leaf cross-section	1	Level	22
		2	Reflexed	42
		3	Incurved	5
		4	Twisted	39
28.	Season of flowering	3	Early (Nov – Dec)	40
		5	Mid (Dec – Jan)	52
		7	Late (Jan – Feb)	16

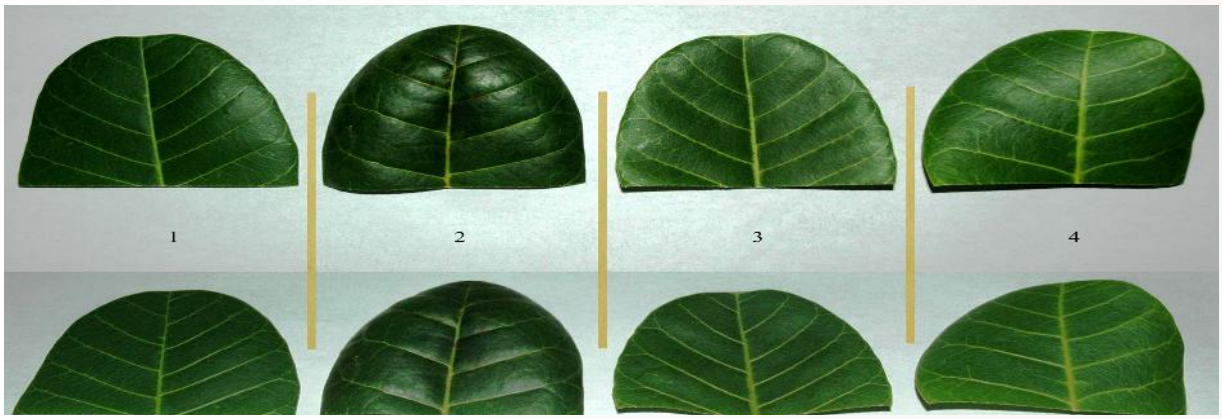
Field	Character name		Descriptor state	Numberof accessions
29.	Inflorescence shape	3	Narrowly pyramidal	4
		5	Pyramidal	57
		7	Broadly pyramidal	47
30.	Flower colour	1	White	0
		2	Cream	108
		3	Pink	0
31.	Mature cashew apple colour	1	Yellow	53
		2	Red	38
		3	Yellow Red	17
		4	Red Purple	0
32.	Cashew apple shape	1	Cylindrical	27
		2	Conical-obovate	67
		3	Round	13
		4	Pyriform	1
33.	Colour of mature nut shell	1	Buff	0
		2	Grey	108
		3	Purple	0
34.	Nut shape	1	Kidney	106
		2	Oblong-ellipsoid	2
35.	Nut weight	3	Low (< 5 g)	13
		5	Intermediate (5 – 7 g)	54
		7	High (> 7 g)	41
36.	Colour of boot leaf	1	Light green	107
		2	Green	1
38.	Compactness of inflorescence	3	Loose	93
		7	Compact	15
39.	Type of inflorescence branching	1	All around main axis	108
		2	Two sided	0
40.	Sex ratio (Ratio of hermaphrodite flowers to total number of flowers)	3	Low (< 0.06)	0
		5	Medium (0.06 – 0.13)	70
		7	High (> 0.13)	38

Field	Character name		Descriptor state	Numberof accessions
41.	Secondary flowering	0	Absent	79
		+	Present	29
43.	Weight of cashew apple	3	Low (< 27 g)	1
		5	Medium (27 – 52 g)	34
		7	High (> 52 g)	73
44.	Shape of cashew apple base	1	Angular	14
		2	Rounded	30
		3	Flattened	45
		4	Obliquely flattened	19

23 : Leaf Apex Shape

1. Pointed 2. Rounded 3. Indented (slight touch)

27: Leaf Cross Section



1. Level 2. Reflexed 3. Incurved 4. Twisted

29: Inflorescence Shape

1. Narrowly Pyramidal 2. Pyramidal 3. Broadly Pyramidal

30 : Flower Colour

1. White 2. Cream 3. Pink

32: Cashew Apple Shape

1.Cylindrical 2. Conical Obovate 3. Round 4. Pyirform

34: Nut Shape

1. Kidney 2. Oblong-ellipsoid

38: Compactness of inflorescence

3. Loose 7. Compact

44: Shape of cashew apple base

1. Angular 2. Rounded 3. Flattened 4. Obliquely flattened

Field	Character name	Descriptor state		Numberof accessions
45.	Ridges on cashew apple	0	Absent	5
		1	Broken	97
		2	Entire	6
46.	Cashew apple apex	1	Level	67
		2	Oblique	41
47.	Grooves on apex of cashew apple	0	Absent	3
		3	Shallow (Notched)	92
		7	Deep (Furrowed)	13
48.	Cavity at apex of cashew apple	0	Absent	1
		3	Shallow	83
		7	Deep	24
49.	Skin of cashew apple	1	Smooth and glossy	108
		2	Rough and dull	0
50.	Attachment of nut to apple	3	Loose	52
		5	Intermediate	37
		7	Tight	19
51.	Shape of nut base	1	Round	45
		2	Flattened	18
		3	Obliquely flattened	38
		4	Angular	7
52.	Suture of nut	1	Round	48
		2	Angular	60
53.	Flanks of nut	3	Flattened	19
		5	Round	75
		7	Bulging	14
54.	Stylar scar on nut	3	Small (Narrow)	57
		7	Large (Wide)	51
55.	Shape of nut apex	1	Round	56
		2	Intermediate	50
		3	Pointed	2
56.	Relative position of suture and apex	1	Suture projection in front of apex	65
		2	Suture projection in line with apex	38
		3	Suture projection behind apex	5

Field	Character name	Descriptor state		Numberof accessions
57.	Shell thickness	3	Thin (< 2.5 mm)	4
		5	Intermediate (2.5 – 4.0 mm)	100
		7	Thick (> 4.0 mm)	4
58.	Uniformity of shell thickness	0	Not uniform	49
		+	Uniform	59
60.	Flowering duration	3	Short (< 60 days)	11
		5	Medium (60 – 90 days)	53
		7	Long (> 90 days)	44
61.	Flowering intensity per m^2 (% of flowering laterals over total number of laterals)	3	Low (< 40%)	12
		5	Medium (40 – 70%)	85
		7	High (> 70%)	11
62.	Apple to nut ratio	3	Low (< 6.0)	12
		5	Medium (6.0 – 12.0)	80
		7	High (> 12.0)	16

45: Ridges on cashew apple

0 Absent 1 Broken 2 Entire

46: Cashew Apple Apex

1 level 2 Oblique

47: Grooves on apex of cashew apple

0 Absent 3 Shallow (Notched) 7 Deep (Furrowed

48: Cavity at apex of cashew apple

0 Absent 3 Shallow 7 Deep

49: Skin of cashew apple

1 Smooth and glassy 2 Rough and dull

51: Shape of nut base

1 Round 2 Flattened 3 Obliquely flattened 4 Angular

52: Suture of nut

1 Round 2 Angular

53: Flanks of nut

3 Flattened 5 Round 7 Bulging

54: Stylar scar on nut

3 Small (Narrow) 7 Large (Wide)

55: Shape of nut apex

1 Round 2 Intermediate 3 Pointed

56: Relative Position of Suture and apex

1 Suture projection in front of apex 2 Suture projection in line with apex 3 Suture projection behind apex

Field	Character name	Descriptor state		Numberof accessions
63.	Shelling percentage	3	Low (< 18.0%)	2
		5	Intermediate (18.0 – 28.0%)	29
		7	High (> 28.0%)	77
64.	Kernel weight	3	Low (< 1.2 g)	1
		5	Intermediate (1.2 – 2.5 g)	87
		7	High (> 2.5 g)	20
65.	Attachment of peel to kernel	3	Loose	91
		7	Tight	17
67.	Cotyledonary grooves	3	Shallow	76
		7	Deep	32
68	Cumulative yield per plant (6 annual harvests)	3	Low (< 9 kg)	41
		5	Medium (9 – 18 kg)	42
		7	High (> 18 kg)	25

CITATIONS

Anonymous. 1995. RHS colour chart. The Royal Horticultural Society, 80 Vincent Square, London SW 1P 2 PE.

Bhaskara Rao, E.V.V. and Swamy, K.R.M. 1994. Genetic Resources of Cashew. In: Advances in Horticulture Vol.9. Plantation and Spice Crops Part-I (Eds.K.L.Chadha and P.Rethinam). Malhotra Publishing House, New Delhi, pp 79-97.

IBPGR. 1986. Cashew Descriptors. International Board for Plant Genetic Resources (Presently Bioversity International), Rome.33pp.

Swamy, K.R.M., Bhaskara Rao, E.V.V. and Bhat, M.G. 1997. Catalogue of Minimum Descriptors of Cashew (*Anacardium occidentale* L.) Germplasm Accessions-I. National Research Centre for Cashew, Puttur, Karnataka. (June 1997) 41pp.

Swamy, K.R.M., Bhaskara Rao, E.V.V. and Bhat, M.G. 1998. Catalogue of Minimum Descriptors of Cashew (*Anacardium occidentale* L.) Germplasm Accessions-II. National Research Centre for Cashew, Puttur, Karnataka. (October 1998) 54 pp.

Swamy, K.R.M., Bhaskara Rao, E.V.V. and Bhat, M.G. 2000. Catalogue of Minimum Descriptors of Cashew (*Anacardium occidentale* L.) Germplasm Accessions-III. National Research Centre for Cashew, Puttur, Karnataka. (October 2000) 54 pp.

CASHEW GERMPLASM ACCESSIONS

YOP	DF01	DF02	DF03	*DF04*	DF05	DF06	DF07	DF08	DF09	DF10	DF11	DF12	DF13	DF14	DF15	DF16
1991	NRC256	Ramana Gardens, (APFDC), Mendu, Kasibugga, AP	Sreekakulam-1	*A. occidentale*	1	10	5	1.4	2	4.3	5.9	+	3	7	16.4	1
1991	NRC257	Ramana Gardens, (APFDC), Mendu, Kasibugga, AP	Sreekakulam-2	*A. occidentale*	1	10	5	1.4	1	3.8	5.5	+	3	7	15.2	2
1991	NRC258	Ramana Gardens, (APFDC), Mendu, Kasibugga, AP	Sreekakulam-3	*A. occidentale*	1	10	5	1.4	3	3.4	5.2	+	3	7	14.8	1
1991	NRC259	Ramana Gardens, (APFDC), Mendu, Kasibugga, AP	Sreekakulam-4	*A. occidentale*	1	10	5	1.1	1	3.1	4.9	+	3	7	13.3	1
1991	NRC260	Ramana Gardens, (APFDC), Mendu, Kasibugga, AP	Sreekakulam-7	*A. occidentale*	1	10	7	1.2	2	3.6	6.0	+	3	7	14.4	2
1991	NRC261	Ramana Gardens, (APFDC), Mendu, Kasibugga, AP	Sreekakulam-8	*A. occidentale*	1	10	5	1.5	1	3.8	4.6	+	3	7	15.0	1
1991	NRC262	Ahmed Sharief Gardens, Marripalem, Narasipatnam, AP	Visakhapatnam-1	*A. occidentale*	1	10	5	1.4	3	4.7	5.7	+	3	7	14.1	1
1991	NRC263	Ahmed Sharief Gardens, Marripalem, Narasipatnam, AP	Visakhapatnam-2	*A. occidentale*	1	10	5	1.7	3	4.4	5.2	+	3	7	15.5	1
1991	NRC264	Ahmed Sharief Gardens, Marripalem, Narasipatnam, AP	Visakhapatnam-3	*A. occidentale*	1	10	5	1.4	2	4.7	5.0	+	3	7	14.7	2
1991	NRC265	Ahmed Sharief Gardens, Marripalem, Narasipatnam, AP	Visakhapatnam-5	*A. occidentale*	1	10	5	1.7	2	3.8	4.8	+	3	7	13.2	2
1991	NRC266	Ahmed Sharief Gardens, Marripalem, Narasipatnam, AP	Visakhapatnam-6	*A. occidentale*	1	10	5	1.5	2	5.2	4.8	+	3	7	15.6	1
1991	NRC267	RRS, Jhargram, WB	Jhargram-1	*A. occidentale*	1	10	5	1.3	3	3.5	5.3	+	3	7	14.9	1
1991	NRC268	CPCRI, RS, Vittal,Karnataka	VTH 781/2 I	*A. occidentale*	1	10	5	1.5	3	4.1	4.8	+	3	3	14.1	1
1991	NRC269	RFRS, Vengurla, Maharashtra	Kankadi-I	*A. occidentale*	1	10	5	1.6	3	4.5	5.8	+	3	7	15.9	1
1992	NRC270	RFRS, Vengurla, Maharashtra	Vetore-I	*A. occidentale*	1	10	3	1.6	2	5.3	4.3	+	3	7	18.0	1
1992	NRC271	RFRS, Vengurla, Maharashtra	Vetore-II	*A. occidentale*	1	10	5	1.5	2	3.8	4.7	+	3	7	22.3	1
1992	NRC272	RFRS, Vengurla, Maharashtra	Kas	*A. occidentale*	1	10	5	1.5	3	4.6	5.1	+	3	7	21.6	1
1992	NRC273	RFRS, Vengurla, Maharashtra	Banda-V	*A. occidentale*	1	10	5	1.5	2	4.7	6.0	+	3	7	19.6	1
1992	NRC274	RFRS, Vengurla, Maharashtra	Aakhane	*A. occidentale*	1	10	5	1.8	3	4.8	6.3	+	3	7	26.0	1

YOP	DF01	DF02	DF03	*DF04*	DF05	DF06	DF07	DF08	DF09	DF10	DF11	DF12	DF13	DF14	DF15	DF16
1992	NRC275	RFRS, Vengurla, Maharashtra	Vadkhol	*A. occidentale*	1	10	3	1.3	2	4.5	4.8	+	3	7	25.6	1
1992	NRC276	RFRS, Vengurla, Maharashtra	Bhutnath-II	*A. occidentale*	1	10	7	1.3	2	3.1	5.0	+	3	7	24.6	1
1992	NRC277	RFRS, Vengurla, Maharashtra	Bhedasi	*A. occidentale*	1	10	5	1.6	2	4.2	5.0	+	3	7	25.6	1
1992	NRC278	RFRS, Vengurla, Maharashtra	Sirtal	*A. occidentale*	1	10	5	1.6	2	4.4	5.7	+	3	7	25.6	1
1992	NRC279	RFRS, Vengurla, Maharashtra	Humbarmal	*A. occidentale*	1	10	5	2.3	2	4.2	5.9	+	3	7	22.0	1
1992	NRC280	RFRS, Vengurla, Maharashtra	Harche	*A. occidentale*	1	10	7	1.5	3	2.8	4.5	+	3	7	26.1	1
1992	NRC281	RFRS, Vengurla, Maharashtra	Tulas (CNSL Free)	*A. occidentale*	1	10	3	2.0	2	4.3	5.0	+	3	7	23.3	1
1992	NRC282	KCDC, Puttur, Karnataka	Kodimbady	*A. occidentale*	1	10	5	1.6	2	4.7	5.0	+	3	7	20.6	1
1992	NRC283	CRS, Kottarakkara, Kerala	Brazil-120	*A. occidentale*	1	10	5	2.0	2	5.2	5.1	+	3	7	27.6	1
1992	NRC284	CRS, Kottarakkara, Kerala	Brazil-241	*A. occidentale*	1	10	5	1.6	2	4.3	3.9	+	3	7	28.0	1
1992	NRC285	CRS, Kottarakkara, Kerala	CNSL Free (Kottarakkara)	*A. occidentale*	1	10	7	1.4	1	3.3	3.7	+	3	7	19.0	1
1993	NRC286	Chintamani Taluk, Karnataka	Kothur-1	*A. occidentale*	1	10	5	1.1	3	5.3	3.5	+	3	7	14.7	1
1993	NRC287	Chintamani Taluk, Karnataka	Kothur-6	*A. occidentale*	1	10	5	1.7	3	3.7	5.3	+	3	7	24.3	1
1993	NRC288	Chintamani Taluk, Karnataka	Hadigere-1	*A. occidentale*	1	10	5	1.2	2	4.2	5.0	+	3	7	20.3	1
1993	NRC289	Mlabagal Taluk, Karnataka	H.Gollahally-1	*A. occidentale*	1	10	5	1.3	3	5.5	5.6	+	3	7	15.7	1
1993	NRC290	Mlabagal Taluk, Karnataka	Dinahally-1	*A. occidentale*	1	10	5	1.0	2	4.2	5.5	+	3	7	13.3	1
1993	NRC291	Chintamani Taluk, Karnataka	Hebri-1	*A. occidentale*	1	10	5	1.3	2	3.8	6.0	+	3	3	17.8	1
1993	NRC292	Chintamani Taluk, Karnataka	Hebri-2	*A. occidentale*	1	10	5	1.6	2	4.1	5.6	+	3	7	20.7	1
1993	NRC293	Chintamani Taluk, Karnataka	Hebri-3	*A. occidentale*	1	10	5	1.1	2	5.6	5.8	+	3	7	14.5	1
1993	NRC294	Shidlaghatta Taluk, Karnataka	Chikkadasarahally-1	*A. occidentale*	1	10	5	1.7	2	5.9	4.9	+	3	7	22.3	1
1993	NRC295	Shidlaghatta Taluk, Karnataka	Chikkadasarahally-6	*A. occidentale*	1	10	5	1.3	2	4.2	5.1	+	3	7	19.0	1
1993	NRC296	Shidlaghatta Taluk, Karnataka	Chikkadasarahally-8	*A. occidentale*	1	10	3	1.5	2	5.5	5.3	+	3	7	17.7	2
1993	NRC297	Srinivasapura Taluk, Karnataka	Hogalagere 1a	*A. occidentale*	1	10	5	1.8	2	4.3	5.6	+	3	7	26.0	1
1993	NRC298	Mulbagal Taluk, Karnataka	H.Gollahally-1a	*A. occidentale*	1	10	3	1.6	2	5.1	4.8	+	3	7	21.0	1
1993	NRC299	Mulbagal Taluk, Karnataka	H.Gollahally-1b	*A. occidentale*	1	10	3	1.5	2	3.1	4.3	+	3	7	19.0	2
1993	NRC300	RRS, Vridhachalam	VRI-3, M 26/2, RRS, Vridhachalam	*A. occidentale*	1	10	3	1.2	3	3.0	4.4	+	3	7	15.3	2

YOP	DF01	DF02	DF03	*DF04*	DF05	DF06	DF07	DF08	DF09	DF10	DF11	DF12	DF13	DF14	DF15	DF16
1994	NRC301	CRS, Madakkathara	Ullal 12-2, CRS, Madakkathara	*A. occidentale*	1	10	7	1.4	3	4.5	7.1	+	3	3	16.7	1
1994	NRC302	Orissa	Aiginia T.No.113	*A. occidentale*	1	10	5	1.2	3	4.8	6.0	+	3	7	17.5	1
1994	NRC303	Orissa	Kirthipura-1	*A. occidentale*	1	10	5	1.1	3	5.3	5.5	+	3	7	18.6	1
1994	NRC304	Orissa	Kirthipura-2	*A. occidentale*	1	10	5	1.0	3	4.0	5.0	+	3	3	15.7	1
1994	NRC305	Orissa	Badaputti-1	*A. occidentale*	1	10	5	0.9	3	4.8	6.3	+	3	7	18.2	1
1994	NRC306	Orissa	Badaputti-2	*A. occidentale*	1	10	5	1.1	2	4.0	4.9	+	3	7	14.9	1
1994	NRC307	Orissa	Badaputti-3	*A. occidentale*	1	10	5	1.2	3	4.5	6.8	+	3	7	16.6	1
1994	NRC308	Midnapore East Dist., West Bengal	Barbaria-1	*A. occidentale*	1	10	7	1.0	3	3.8	5.4	+	3	3	14.6	1
1994	NRC309	Midnapore East Dist., West Bengal	Barbaria-2	*A. occidentale*	1	10	7	1.0	3	3.3	5.3	+	3	3	12.4	1
1994	NRC310	Midnapore East Dist., West Bengal	Barbaria-3	*A. occidentale*	1	10	5	0.9	3	5.8	6.3	+	3	7	18.7	1
1994	NRC311	Midnapore East Dist., West Bengal	Barbaria-4	*A. occidentale*	1	10	5	1.2	3	4.5	6.1	+	3	7	16.3	1
1994	NRC312	Midnapore East Dist., West Bengal	Depal-1	*A. occidentale*	1	10	5	0.9	2	3.3	4.8	+	3	3	13.2	1
1994	NRC313	Midnapore East Dist., West Bengal	Depal-2	*A. occidentale*	1	10	7	1.3	2	3.3	5.4	+	3	7	12.9	1
1994	NRC314	Midnapore East Dist., West Bengal	Depal-3	*A. occidentale*	1	10	7	1.1	3	3.0	4.8	+	3	7	11.3	1
1994	NRC315	Midnapore East Dist., West Bengal	Depal-4	*A. occidentale*	1	10	7	0.8	3	3.0	5.3	+	3	3	11.9	1
1994	NRC316	Midnapore East Dist., West Bengal	Depal-5	*A. occidentale*	1	10	7	1.1	2	2.8	5.6	+	3	3	10.2	1
1994	NRC317	Midnapore East Dist., West Bengal	Hameerpur-1	*A. occidentale*	1	10	7	0.8	2	2.8	3.6	+	3	7	9.3	1
1994	NRC318	Midnapore East Dist., West Bengal	Hameerpur-2	*A. occidentale*	1	10	5	1.5	3	4.5	5.5	+	3	7	16.4	1
1994	NRC319	Midnapore East Dist., West Bengal	Hameerpur-3	*A. occidentale*	1	10	5	0.9	3	3.8	5.1	+	3	7	14.8	1
1994	NRC320	Midnapore East Dist., West Bengal	Hameerpur-4	*A. occidentale*	1	10	7	0.8	3	3.0	6.6	+	3	7	11.4	1
1997	NRC321	Kodimbady, D.K., Karnataka	Kodimbady-1	*A. occidentale*	1	10	5	1.6	3	6.3	8.3	+	3	7	12.3	1
1997	NRC322	Kodimbady, D.K., Karnataka	Kodimbady-2	*A. occidentale*	1	10	3	1.8	2	4.3	7.1	+	3	7	8.5	2
1997	NRC323	Belal, D.K., Karnataka	Belal-1	*A. occidentale*	1	10	5	0.8	3	6.7	7.8	+	3	7	5.7	1
1997	NRC324	Belal, D.K., Karnataka	Belal-2	*A. occidentale*	1	10	5	1.3	2	5.5	6.5	+	3	7	7.7	1
1997	NRC325	Belal, D.K., Karnataka	Belal-3	*A. occidentale*	1	10	5	1.8	3	7.4	7.5	+	3	7	7.8	1
1997	NRC326	Belal, D.K., Karnataka	Belal-4	*A. occidentale*	1	10	5	1.6	2	5.9	8.0	+	3	7	9.3	1
1997	NRC327	KCDC, Suvarmale, Puttur, Karnataka	Suvarmale-1	*A. occidentale*	1	10	5	0.9	3	7.3	9.3	+	3	7	9.0	1

YOP	DF01	DF02	DF03	*DF04*	DF05	DF06	DF07	DF08	DF09	DF10	DF11	DF12	DF13	DF14	DF15	DF16
1997	NRC328	KCDC, Halaneranki, Puttur, Karnataka	Halaneranki-1	*A. occidentale*	1	10	5	1.7	3	5.3	6.6	+	3	7	8.5	1
1997	NRC329	KCDC Halaneranki, Puttur, Karnataka	Halaneranki-2	*A. occidentale*	1	10	5	1.0	3	5.3	7.1	+	3	7	9.5	1
1997	NRC330	KCDC, Koila, Puttur	Kolia-1	*A. occidentale*	1	10	5	1.5	3	5.8	6.3	+	3	7	8.3	1
1997	NRC331	CPCRI (SF), Kidu, Puttur	Kidu-1	*A. occidentale*	1	10	3	1.3	3	5.3	6.9	+	3	3	9.0	2
1997	NRC332	KCDC, Aranthakallu, Puttur, Karnataka	Aranthakallu-1	*A. occidentale*	1	10	3	1.3	3	5.3	6.4	+	3	7	11.7	2
1997	NRC333	KCDC, Kodiyala, Puttur, Karnataka	Kodiyala-1	*A. occidentale*	1	10	5	1.9	3	6.4	6.3	+	3	7	6.5	1
1997	NRC334	KCDC,Kodilaya, Puttur, Karnataka	Kodiyala-2	*A. occidentale*	1	10	3	1.4	3	7.3	6.1	+	3	7	7.0	2
1997	NRC335	KCDC, Alike, Bantwal, Karnataka	Alike-1	*A. occidentale*	1	10	5	2.4	3	6.5	7.8	+	3	7	13.3	2
1997	NRC336	KCDC, Alike, Bantwal, Karnataka	Alike-2	*A. occidentale*	1	10	5	1.2	3	7.3	8.4	+	3	7	13.0	1
1997	NRC337	KCDC, Paranki, Karkala	Paranki-1	*A. occidentale*	1	10	5	1.4	3	6.7	8.1	+	3	7	10.0	1
1997	NRC338	KCDC, Paranki, Karkala	Paranki-2	*A. occidentale*	1	10	5	2.0	2	6.3	7.5	+	3	7	12.0	1
1997	NRC339	KCDC, Karkala	Konaje Marpady-1	*A. occidentale*	1	10	5	1.8	3	7.4	7.4	+	3	7	11.3	1
1997	NRC340	KCDC, Karkala	KM-2	*A. occidentale*	1	10	5	1.1	3	6.3	7.3	+	3	3	6.7	1
1997	NRC341	KCDC, Karkala	DV-1	*A. occidentale*	1	10	5	1.2	3	5.3	6.6	+	3	7	7.7	2
1997	NRC342	KCDC, Karkala	DV-2	*A. occidentale*	1	10	5	1.0	3	5.3	8.4	+	3	7	6.3	2
1997	NRC343	KCDC, Sablady, Kundapur, Karnataka	SL-1	*A. occidentale*	1	10	5	1.6	3	7.3	8.3	+	3	7	7.0	2
1997	NRC344	KCDC, Shirur Paduvare, Kundapura, Karnataka	SP-1	*A. occidentale*	1	10	5	1.3	3	7.1	8.5	+	3	7	7.7	2
1997	NRC345	RFRS, Vengurla	Vengurla-1	*A. occidentale*	1	10	3	1.0	2	5.5	6.9	+	3	7	8.7	2
1997	NRC346	RFRS, Vengurla	Vengurla-4	*A. occidentale*	1	10	5	1.3	3	5.3	7.8	+	3	7	9.3	1
1997	NRC347	ARS, Vridhachalam	VRI-1	*A. occidentale*	1	10	3	1.2	2	4.9	6.1	+	3	7	6.3	2
1997	NRC348	CRS, Madakkathara	K-22-1	*A. occidentale*	1	10	3	1.4	3	5.4	6.1	+	3	7	7.3	2
1997	NRC349	CRS, Madakkathara	NDR-2-1	*A. occidentale*	1	10	5	1.2	3	6.8	8.4	+	3	7	8.3	2
1997	NRC350	CRS, Madakkathara	Dhana	*A. occidentale*	1	10	3	1.6	3	6.5	7.5	+	3	3	9.0	2
1997	NRC351	CRS, Madakkathara	Kanaka	*A. occidentale*	1	10	5	1.4	3	7.3	8.9	+	3	3	9.0	2
1997	NRC352	ARS, Ullal	Ullal-1	*A. occidentale*	1	10	5	2.0	2	8.2	7.4	+	3	7	9.0	2
1997	NRC353	ARS, Ullal	Ullal-2	*A. occidentale*	1	10	5	1.6	3	6.3	5.8	+	3	7	22.7	2

YOP	DF01	DF02	DF03	*DF04*	DF05	DF06	DF07	DF08	DF09	DF10	DF11	DF12	DF13	DF14	DF15	DF16
1997	NRC354	ARS, Ullal	Ullal-3	*A. occidentale*	1	10	3	1.1	2	6.7	7.5	+	3	7	9.7	2
1997	NRC355	ARS, Ullal	Ullal-4	*A. occidentale*	1	10	5	1.4	2	6.2	8.6	+	3	7	13.0	2
1997	NRC356	ARS, Chintamani	Chintamani-1	*A. occidentale*	1	10	5	0.7	3	6.5	6.6	+	3	3	6.0	2
1997	NRC357	RFRS, Vengurla	Vengurla-6	*A. occidentale*	1	10	3	1.3	3	5.7	7.4	+	3	7	7.0	2
1997	NRC358	RFRS, Vengurla	Vengurla-2	*A. occidentale*	1	10	3	1.0	3	7.7	7.5	+	3	7	6.7	2
1997	NRC359	RFRS, Vengurla	Vengurla-3	*A. occidentale*	1	10	3	1.4	2	6.3	6.5	+	3	7	11.0	2
1997	NRC360	RFRS, Vengurla	Vengurla-5	*A. occidentale*	1	10	3	1.6	3	6.8	8.8	+	3	7	7.7	2
1997	NRC361	CRS, Bapatla	BPP-2	*A. occidentale*	1	10	5	1.6	3	6.3	8.1	+	3	7	8.3	1
1997	NRC362	CRS, Madakkathara	Priyanka	*A. occidentale*	1	10	5	1.4	3	5.4	5.6	+	3	7	8.3	2
1997	NRC363	ARS, Ullal	UN-50	*A. occidentale*	1	10	5	0.8	2	7.2	8.0	+	3	7	4.0	1

DF01	DF17	DF18	DF19	DF20	DF21	DF22	DF23	DF24	DF25	DF26	DF27	DF28	DF29	DF30	DF31	DF32	DF33	DF34	DF35	DF36
NRC256	5.4	11	2	2	1	1	3	105.0	3	3	2	3	7	2	1	2	2	1	5.83	1
NRC257	4.6	11	2	2	1	1	1	97.0	3	3	2	3	5	2	1	2	2	1	6.33	1
NRC258	4.6	10	3	3	1	1	2	103.3	3	3	1	3	5	2	1	2	2	1	6.33	1
NRC259	4.8	12	2	2	1	1	1	101.8	3	3	2	3	7	2	1	2	2	1	6.39	1
NRC260	4.6	12	2	3	1	1	3	100.1	3	3	1	5	5	2	1	2	2	1	7.49	1
NRC261	4.6	10	3	2	1	1	2	92.3	3	3	2	3	7	2	2	2	2	1	6.40	1
NRC262	4.6	10	3	3	1	1	3	112.2	3	3	2	3	5	2	1	2	2	1	6.95	1
NRC263	4.9	9	3	3	1	1	2	127.2	3	3	1	3	3	2	1	2	2	1	8.39	1
NRC264	4.7	10	1	2	1	1	2	104.2	3	3	2	3	5	2	1	2	2	1	6.71	1
NRC265	4.6	8	3	2	1	1	2	104.5	3	3	2	3	5	2	1	2	2	1	6.79	1
NRC266	4.8	10	2	3	1	1	2	121.5	3	3	2	3	5	2	1	2	2	1	4.41	1
NRC267	4.6	11	2	3	1	1	3	115.0	3	3	1	3	3	2	1	2	2	1	5.75	1
NRC268	5.0	9	3	2	1	1	2	142.1	3	3	2	5	5	2	1	2	2	1	5.87	1
NRC269	4.6	10	2	3	1	1	3	118.1	3	3	2	3	7	2	1	2	2	1	16.78	1
NRC270	6.3	11	2	2	1	1	2	168.3	3	3	2	5	5	2	3	2	2	1	11.80	1
NRC271	6.0	11	1	2	1	1	2	121.3	3	3	4	3	5	2	3	2	2	1	10.40	1
NRC272	7.0	12	3	2	1	1	3	109.9	3	3	2	3	5	2	2	2	2	1	9.30	1
NRC273	7.0	10	2	2	1	1	2	132.3	3	3	4	3	5	2	2	3	2	1	10.60	1
NRC274	6.3	15	2	2	1	1	2	113.3	3	3	2	7	5	2	1	2	2	1	4.50	1
NRC275	6.6	14	3	2	1	1	2	122.6	3	3	4	3	5	2	1	2	2	1	10.60	1
NRC276	7.0	13	3	2	1	1	3	115.6	3	3	2	3	7	2	3	2	2	1	9.20	1
NRC277	8.0	10	1	3	1	1	2	152.0	3	3	4	3	5	2	1	2	2	1	10.00	1
NRC278	6.3	14	1	2	1	1	2	150.3	3	3	2	5	7	2	3	2	2	1	12.00	1
NRC279	7.3	10	3	2	1	1	2	156.0	3	3	4	5	7	2	3	2	2	1	12.10	1
NRC280	6.3	12	1	2	1	1	2	111.9	3	3	4	3	7	2	1	2	2	1	10.30	1
NRC281	7.0	16	3	2	1	1	2	87.9	3	3	4	7	7	2	2	2	2	1	4.20	2
NRC282	7.0	9	3	2	1	1	2	88.0	3	3	4	3	5	2	2	2	2	1	8.30	1
NRC283	6.6	12	3	2	1	1	2	122.1	3	3	4	5	7	2	3	1	2	1	8.20	1

DF01	DF17	DF18	DF19	DF20	DF21	DF22	DF23	DF24	DF25	DF26	DF27	DF28	DF29	DF30	DF31	DF32	DF33	DF34	DF35	DF36
NRC284	7.0	14	1	2	1	1	2	127.0	3	3	4	5	7	2	2	2	2	1	5.90	1
NRC285	6.3	11	1	2	1	1	2	110.9	3	3	4	3	5	2	2	3	2	1	4.80	1
NRC286	5.3	13	3	2	1	1	3	77.8	3	3	2	3	5	2	2	2	2	1	9.47	1
NRC287	5.7	14	2	2	1	1	2	130.0	3	3	2	3	7	2	1	2	2	1	9.60	1
NRC288	6.3	17	2	2	1	1	1	130.7	3	3	4	3	5	2	2	1	2	1	9.70	1
NRC289	5.7	12	2	2	1	1	2	129.3	3	3	4	3	5	2	2	2	2	1	6.60	1
NRC290	5.5	14	2	2	1	1	2	107.1	3	3	4	3	7	2	1	2	2	1	9.10	1
NRC291	5.0	14	2	2	1	1	2	159.0	3	3	4	3	7	2	2	1	2	1	8.53	1
NRC292	5.2	13	2	2	1	1	2	70.9	3	3	4	3	5	2	1	1	2	1	8.43	1
NRC293	4.5	13	2	2	1	1	3	106.9	3	3	4	3	5	2	1	2	2	1	8.40	1
NRC294	5.0	13	1	2	1	1	2	97.9	3	3	4	5	7	2	1	2	2	1	6.07	1
NRC295	5.0	14	2	2	1	1	2	88.0	3	3	4	3	7	2	2	1	2	1	6.37	1
NRC296	5.0	11	3	2	1	1	2	132.9	3	3	4	3	3	2	1	2	2	1	5.37	1
NRC297	4.7	14	2	2	1	1	2	61.7	3	3	4	3	5	2	2	2	2	1	6.67	1
NRC298	4.7	13	1	2	1	1	2	115.6	3	3	2	5	7	2	1	2	2	1	5.90	1
NRC299	5.0	13	1	2	1	1	2	71.5	3	3	4	3	7	2	1	2	2	1	5.83	1
NRC300	5.0	13	3	2	1	1	2	68.8	3	3	4	3	7	2	1	2	2	1	6.93	1
NRC301	6.2	16	2	2	1	1	2	142.1	3	3	1	3	7	2	2	1	2	1	10.92	1
NRC302	6.3	12	2	2	1	1	2	111.4	3	3	2	3	7	2	1	2	2	2	8.53	1
NRC303	5.7	17	2	2	1	1	2	118.0	3	3	1	5	5	2	1	1	2	1	6.41	1
NRC304	6.5	17	2	2	1	2	1	120.5	3	3	1	5	5	2	3	1	2	1	5.33	1
NRC305	6.7	12	2	2	1	1	2	119.0	3	3	1	3	5	2	3	2	2	1	6.22	1
NRC306	5.5	15	1	2	1	1	1	81.4	3	3	3	5	5	2	1	2	2	1	6.01	1
NRC307	5.3	13	2	2	1	1	2	118.6	3	3	4	5	7	2	1	1	2	1	6.08	1
NRC308	5.0	13	2	2	1	1	2	122.1	3	3	4	5	5	2	2	1	2	2	4.53	1
NRC309	5.7	10	2	2	1	1	2	107.7	3	3	4	7	7	2	2	2	2	1	5.15	1
NRC310	5.5	11	2	2	1	1	2	98.6	3	3	4	5	7	2	2	1	2	1	5.14	1
NRC311	6.3	16	1	2	1	1	2	115.6	3	3	1	7	5	2	2	2	2	1	7.01	1
NRC312	6.7	16	1	2	1	1	2	81.6	3	3	4	5	7	2	2	1	2	1	5.64	1
NRC313	6.0	12	2	2	1	1	1	107.4	3	3	3	5	5	2	2	1	2	1	6.42	1
NRC314	6.3	15	2	2	1	1	2	82.4	3	3	1	7	5	2	2	2	2	1	5.34	1
NRC315	6.7	11	2	2	1	1	3	122.8	3	3	1	5	7	2	2	1	2	1	5.25	1
NRC316	5.5	10	2	2	1	1	2	106.4	3	3	4	7	5	2	1	1	2	1	6.33	1
NRC317	6.0	15	2	2	1	2	2	97.2	3	3	4	5	7	2	1	4	2	1	5.31	1
NRC318	5.3	16	2	2	1	1	3	110.8	3	3	1	3	7	2	3	1	2	1	4.25	1
NRC319	5.6	12	2	2	1	2	2	130.1	3	3	1	5	7	2	3	2	2	1	4.26	1
NRC320	6.5	11	2	2	1	2	2	121.3	3	3	4	5	7	2	2	1	2	1	6.24	1
NRC321	6.3	9	2	2	1	1	3	54.8	3	3	2	5	7	2	3	2	2	1	7.50	1
NRC322	7.7	9	2	2	1	1	2	108.8	3	3	2	5	5	2	1	1	2	1	4.30	1
NRC323	5.3	8	2	2	1	1	2	100.8	3	3	1	5	7	2	2	2	2	1	11.60	1
NRC324	5.7	10	2	2	1	1	2	101.8	3	3	2	7	7	2	1	2	2	1	8.10	1
NRC325	6.3	10	1	2	1	1	1	72.2	3	3	1	5	5	2	2	1	2	1	4.70	1
NRC326	6.0	9	2	2	1	1	1	75.5	3	3	1	5	5	2	2	3	2	1	6.90	1
NRC327	6.3	8	2	2	1	1	2	66.3	3	3	2	5	5	2	1	1	2	1	7.20	1

DF01	DF17	DF18	DF19	DF20	DF21	DF22	DF23	DF24	DF25	DF26	DF27	DF28	DF29	DF30	DF31	DF32	DF33	DF34	DF35	DF36
NRC328	6.7	9	2	2	1	1	2	112.0	3	3	4	5	5	2	1	2	2	1	8.20	1
NRC329	5.3	11	2	2	1	2	2	107.2	3	3	3	5	5	2	1	2	2	1	4.80	1
NRC330	6.3	8	2	2	1	1	2	107.3	3	3	1	5	5	2	3	2	2	1	6.50	1
NRC331	5.8	10	2	2	1	1	1	109.9	3	3	1	5	7	2	2	2	2	1	7.90	1
NRC332	7.0	10	2	2	1	1	2	119.2	3	3	2	7	7	2	1	1	2	1	6.80	1
NRC333	6.0	9	2	2	1	1	2	93.3	3	3	2	5	7	2	2	1	2	1	11.70	1
NRC334	6.7	11	2	2	1	2	2	77.2	3	3	3	5	7	2	3	1	2	1	6.50	1
NRC335	6.3	12	2	2	1	1	2	107.7	3	3	2	7	7	2	1	3	2	1	9.60	1
NRC336	6.7	8	2	2	1	1	2	101.9	3	3	2	7	5	2	2	2	2	1	6.80	1
NRC337	5.0	8	2	2	1	1	2	106.2	3	3	2	7	7	2	2	2	2	1	8.80	1
NRC338	5.7	8	1	2	1	1	2	83.3	3	3	2	5	7	2	2	1	2	1	6.90	1
NRC339	7.2	7	2	2	1	2	3	108.7	3	3	1	7	7	2	1	2	2	1	7.70	1
NRC340	5.5	9	2	2	1	1	2	95.6	3	3	2	5	5	2	2	1	2	1	7.80	1
NRC341	5.5	9	2	2	1	1	3	70.7	3	3	2	5	5	2	1	2	2	1	6.20	1
NRC342	5.8	9	2	2	1	1	2	126.0	3	3	4	7	5	2	2	3	2	1	5.10	1
NRC343	6.3	11	1	2	1	2	3	111.3	3	3	2	5	5	2	1	3	2	1	6.10	1
NRC344	6.7	10	2	2	1	1	2	97.5	3	3	2	5	7	2	1	2	2	1	5.90	1
NRC345	6.7	9	2	2	1	1	3	67.8	3	3	2	3	5	2	1	3	2	1	5.90	1
NRC346	5.3	11	2	2	1	1	2	94.0	3	3	4	5	5	2	2	2	2	1	6.90	1
NRC347	6.7	10	2	2	1	2	1	59.1	3	3	2	5	5	2	1	2	2	1	5.50	1
NRC348	6.8	11	2	2	1	1	2	77.0	3	3	4	5	3	2	2	2	2	1	6.70	1
NRC349	6.5	7	2	2	1	2	3	104.0	3	3	2	5	5	2	2	2	2	1	7.20	1
NRC350	5.5	10	2	2	1	1	2	106.8	3	3	2	5	5	2	1	2	2	1	6.80	1
NRC351	7.5	9	2	2	1	2	3	85.3	3	3	3	3	5	2	1	2	2	1	6.30	1
NRC352	6.2	9	2	2	1	2	2	78.3	3	3	4	7	5	2	3	3	2	1	6.90	1
NRC353	6.0	11	2	2	1	2	2	71.2	3	3	1	5	7	2	3	3	2	1	6.10	1
NRC354	6.0	10	2	2	1	2	2	102.7	3	3	1	5	7	2	2	2	2	1	7.30	1
NRC355	6.5	9	2	2	1	2	2	97.9	3	3	1	5	7	2	1	2	2	1	7.10	1
NRC356	5.8	8	2	2	1	1	2	64.5	3	3	2	7	5	2	3	3	2	1	6.9	1
NRC357	6.7	8	2	2	1	2	2	64.0	3	3	4	5	5	2	1	2	2	1	7.3	1
NRC358	5.7	10	2	2	1	1	2	81.3	3	3	2	5	5	2	2	1	2	1	4.6	1
NRC359	7.0	10	2	2	1	1	2	116.1	3	3	2	5	5	2	1	3	2	1	7.0	1
NRC360	5.7	8	2	2	1	2	2	79.5	3	3	2	5	5	2	1	3	2	1	4.8	1
NRC361	5.2	7	2	2	1	1	3	57.6	3	3	4	7	5	2	1	3	2	1	4.6	1
NRC362	6.0	8	2	2	1	2	2	90.9	3	3	4	5	7	2	3	2	2	1	9.8	1
NRC363	4.8	11	2	2	1	1	2	76.9	3	3	2	5	7	2	1	1	2	1	6.5	1

DF01	DF39	DF40	DF41	DF42-1	DF42-2	DF43	DF44	DF45	DF46	DF47	DF48	DF49	DF50	DF51	DF52	DF53	DF54	DF55	DF56	DF57	DF58	DF59-1	DF59-2
NRC256	1	0.13	0	4.6	4.3	43.7	3	0	2	3	3	1	5	1	2	5	3	1	2	3.1	+	3.2	2.3
NRC257	1	0.08	0	5.4	4.7	48.7	3	1	2	3	3	1	3	1	2	5	7	1	2	2.5	0	3.3	2.4
NRC258	1	0.09	0	6.6	4.3	57.7	4	1	2	0	3	1	3	1	1	5	3	1	2	3.5	+	3.2	2.3
NRC259	1	0.06	0	5.0	3.8	30.7	4	1	2	3	3	1	3	1	1	5	7	2	3	2.9	+	3.4	2.5
NRC260	1	0.08	0	4.6	3.9	43.3	3	1	1	3	3	1	3	1	2	5	7	1	1	3.5	+	3.3	2.6
NRC261	1	0.13	0	6.0	4.0	50.3	4	1	2	3	3	1	3	4	1	3	3	2	3	2.7	+	3.3	2.3
NRC262	1	0.11	0	4.5	4.0	31.0	4	1	2	3	3	1	3	3	2	7	3	1	2	2.8	+	3.1	2.4
NRC263	1	0.06	0	5.0	4.5	52.0	4	1	2	3	3	1	3	3	2	5	7	1	1	3.4	+	3.4	2.9
NRC264	1	0.08	0	5.2	4.4	62.7	4	1	2	0	3	1	7	1	1	7	3	1	2	3.4	+	3.0	2.4
NRC265	1	0.07	0	5.2	4.4	62.3	4	1	2	3	3	1	3	1	2	7	7	1	2	3.2	+	3.4	2.6
NRC266	1	0.11	0	4.5	3.2	27.0	4	1	2	3	3	1	3	2	1	5	3	1	2	2.8	+	2.7	2.0
NRC267	1	0.14	0	5.2	4.3	47.7	2	1	2	3	3	1	3	1	1	5	7	1	2	3.5	+	3.0	2.4
NRC268	1	0.20	0	4.7	3.7	35.7	3	1	1	3	7	1	5	2	2	5	7	1	1	3.0	+	3.0	2.3
NRC269	1	0.19	0	7.4	5.3	115.8	3	1	1	3	3	1	5	1	2	5	7	1	3	4.3	0	4.7	3.4
NRC270	1	0.18	0	8.2	7.0	101.6	2	1	1	3	7	1	7	1	2	7	7	2	2	4.5	+	4.1	3.0
NRC271	1	0.12	0	5.5	4.5	40.0	4	1	1	3	3	1	5	2	1	3	7	2	1	4.2	+	3.9	3.0
NRC272	1	0.13	0	5.4	5.0	55.0	1	1	1	0	3	1	5	3	1	5	7	1	1	3.8	+	3.5	2.5
NRC273	1	0.14	0	5.0	6.0	68.3	3	1	1	3	3	1	5	2	2	7	7	1	1	4.0	+	4.0	3.4
NRC274	1	0.24	0	6.5	5.0	61.6	1	1	1	3	3	1	7	1	1	5	7	2	2	2.8	+	4.5	2.5
NRC275	1	0.17	0	7.0	6.4	75.0	1	1	2	3	3	1	5	1	1	5	7	1	2	4.0	+	4.0	2.6
NRC276	1	0.15	0	5.7	5.1	55.0	1	1	1	3	3	1	5	1	1	5	7	2	1	3.5	+	4.1	2.7
NRC277	1	0.18	0	7.3	5.5	90.0	4	1	2	3	7	1	7	2	2	7	7	2	1	3.0	+	3.6	3.0
NRC278	1	0.25	0	7.7	5.2	85.0	4	1	2	3	7	1	7	2	2	7	7	2	1	4.6	+	4.0	2.7
NRC279	1	0.27	0	6.4	5.2	63.3	1	1	1	3	3	1	7	1	1	5	7	2	2	3.8	+	3.9	2.9
NRC280	1	0.16	0	7.4	4.5	63.3	4	1	2	3	3	1	5	1	2	5	7	2	2	4.0	+	3.9	2.9
NRC281	1	0.15	0	4.4	3.4	26.6	1	1	2	3	3	1	7	4	1	5	7	2	1	1.8	+	4.0	2.0
NRC282	1	0.16	0	7.3	5.0	66.6	2	1	2	3	3	1	5	1	1	5	7	2	1	3.8	+	4.0	2.8
NRC283	1	0.23	0	8.7	5.4	96.6	3	1	2	3	7	1	7	1	1	3	7	2	2	3.2	+	3.8	2.5
NRC284	1	0.24	0	6.0	4.9	61.6	3	1	2	3	7	1	7	3	1	5	7	1	2	3.0	+	3.4	2.4
NRC285	1	0.17	0	5.6	5.2	61.6	2	1	2	3	7	1	7	4	2	5	7	2	2	1.5	+	3.6	2.4
NRC286	1	0.11	0	7.67	5.83	76.7	2	1	2	3	3	1	5	3	1	7	3	3	1	3.5	0	3.9	2.5
NRC287	1	0.09	0	7.17	5.17	65.0	2	1	2	3	3	1	5	3	2	3	3	2	1	3.7	0	3.9	2.6
NRC288	1	0.10	+	6.33	4.00	53.3	2	1	1	3	3	1	3	3	2	3	3	2	2	3.5	0	4.0	2.5
NRC289	1	0.09	0	7.37	5.17	76.7	4	1	2	3	7	1	7	4	2	7	3	2	1	3.5	+	2.9	2.0
NRC290	1	0.14	0	6.17	4.33	55.0	3	1	2	7	7	1	7	3	2	5	3	2	2	3.2	0	3.9	2.5
NRC291	1	0.12	+	7.17	5.27	68.3	1	1	1	3	7	1	5	2	2	7	7	2	1	3.3	0	3.8	2.5
NRC292	1	0.12	0	9.00	5.17	103.3	1	1	1	3	3	1	7	3	2	5	3	1	2	4.0	+	3.6	2.3
NRC293	1	0.11	0	7.25	5.75	70.0	1	1	1	3	3	1	3	3	2	5	3	2	2	3.8	+	3.4	2.4
NRC294	1	0.17	0	6.17	4.67	41.7	2	1	1	3	3	1	7	2	1	5	3	2	1	3.5	+	2.7	1.9
NRC295	1	0.16	0	7.30	5.30	63.3	2	1	2	7	7	1	3	3	2	7	3	1	1	3.5	+	2.8	2.1
NRC296	1	0.13	+	6.17	4.33	40.0	3	1	2	3	3	1	7	1	1	5	3	2	2	3.8	0	2.6	1.9
NRC297	1	0.10	+	6.33	5.17	60.0	2	1	2	3	3	1	3	3	2	5	3	2	1	2.8	+	2.9	2.0
NRC298	1	0.10	0	7.4	5.9	116	2	2	1	7	7	1	5	3	1	5	3	1	1	2.8	0	2.8	2.3

DF01	DF39	DF40	DF41	DF42-1	DF42-2	DF43	DF44	DF45	DF46	DF47	DF48	DF49	DF50	DF51	DF52	DF53	DF54	DF55	DF56	DF57	DF58	DF59-1	DF59-2
NRC299	1	0.10	0	6.00	5.33	53.3	1	1	2	7	7	1	3	2	2	5	3	2	1	3.3	0	2.6	1.9
NRC300	1	0.16	0	5.83	3.67	31.7	3	1	2	3	3	1	3	3	2	5	3	2	1	3.3	+	2.8	1.9
NRC301	1	0.10	+	10.53	5.70	169.8	3	1	1	3	3	1	3	1	1	5	3	2	1	3.2	0	4.2	2.9
NRC302	1	0.11	0	4.97	3.80	35.9	3	1	2	3	3	1	3	4	1	5	7	2	3	3.5	0	4.0	2.6
NRC303	1	0.13	0	6.33	4.13	50.5	4	1	2	3	3	1	5	3	1	5	7	1	1	3.0	+	3.0	2.6
NRC304	1	0.09	0	6.20	4.10	42.5	3	1	1	7	3	1	3	1	1	3	3	1	2	3.2	0	3.2	2.2
NRC305	1	0.12	0	5.87	4.53	56.6	3	1	1	3	3	1	5	1	2	5	3	2	2	2.8	0	3.4	2.3
NRC306	1	0.08	+	5.95	4.45	50.4	2	1	1	3	3	1	5	3	2	5	3	2	1	3.7	0	3.2	2.5
NRC307	1	0.09	+	6.17	4.30	53.3	3	1	1	7	3	1	5	3	2	7	7	1	1	3.8	+	2.9	2.4
NRC308	1	0.14	0	5.10	3.70	32.5	3	0	1	3	3	1	5	4	2	3	3	2	2	2.5	0	3.4	2.1
NRC309	1	0.08	0	6.60	4.70	68.2	2	1	1	3	7	1	3	1	1	5	3	2	2	2.8	0	3.3	2.0
NRC310	1	0.13	0	6.80	5.20	82.3	3	1	1	3	3	1	5	2	2	5	3	2	2	2.8	0	3.2	2.3
NRC311	1	0.08	0	7.50	5.10	95.7	3	1	1	3	3	1	5	1	1	5	3	2	2	2.5	0	3.5	2.4
NRC312	1	0.12	0	6.20	4.13	49.1	4	1	1	3	3	1	3	3	2	3	3	2	2	2.8	0	3.3	2.4
NRC313	1	0.09	0	6.40	4.50	44.2	1	1	2	3	3	1	3	2	2	5	3	2	1	3.3	0	3.2	2.3
NRC314	1	0.10	0	6.73	4.00	48.2	3	1	1	3	3	1	5	1	1	5	7	2	1	2.8	+	3.2	2.1
NRC315	1	0.10	+	7.43	4.80	64.6	3	0	1	3	3	1	5	1	2	5	7	1	1	2.5	+	3.1	2.2
NRC316	1	0.08	0	7.87	5.00	85.7	2	1	1	7	3	1	5	1	1	7	3	1	1	3.7	+	3.3	2.4
NRC317	1	0.13	0	6.17	3.33	41.9	3	1	2	3	3	1	3	1	2	3	3	1	2	2.8	+	3.2	2.4
NRC318	1	0.08	+	5.87	3.60	31.5	3	1	2	3	7	1	7	1	2	3	3	1	2	2.3	+	3.1	2.1
NRC319	1	0.09	0	6.33	3.90	34.0	3	1	2	3	3	1	7	1	2	3	3	1	2	2.3	+	3.1	2.0
NRC320	1	0.09	0	6.93	4.20	41.5	4	0	1	3	3	1	5	3	2	5	3	1	1	3.0	+	3.3	2.4
NRC321	1	0.12	+	4.8	5.1	68.0	2	1	1	3	3	1	3	2	1	5	7	1	1	3.3	+	3.2	2.5
NRC322	1	0.13	0	7.2	4.4	68.4	2	1	1	3	3	1	3	1	2	5	3	1	1	2.9	+	2.8	2.2
NRC323	1	0.10	0	7.3	5.3	96.0	3	2	1	3	3	1	7	3	1	5	7	2	1	3.4	0	4.1	2.9
NRC324	1	0.09	0	5.8	5.1	88.0	3	1	1	7	3	1	3	2	2	5	3	1	1	3.0	0	3.3	2.7
NRC325	1	0.11	0	6.7	4.3	72.0	3	1	1	7	3	1	5	3	2	3	7	1	1	3.0	0	3.0	2.4
NRC326	1	0.16	0	4.5	4.2	51.0	3	1	1	3	7	1	5	2	1	5	7	1	1	3.1	0	3.1	2.4
NRC327	1	0.12	0	11.0	5.2	130.0	2	1	1	3	3	1	3	1	1	3	3	2	2	2.8	0	3.6	2.6
NRC328	1	0.18	0	6.9	5.5	98.0	3	1	1	3	3	1	3	3	1	7	7	1	1	3.3	0	3.2	2.4
NRC329	1	0.16	0	5.6	4.6	57.0	3	1	1	3	3	1	3	1	2	3	3	2	1	2.6	0	3.2	2.3
NRC330	1	0.15	0	6.6	5.2	74.0	2	1	1	3	3	1	3	1	1	3	3	2	2	2.9	0	3.7	2.5
NRC331	1	0.20	0	5.9	4.9	75.0	1	1	2	3	3	1	3	3	2	5	3	1	1	2.9	+	3.4	2.7
NRC332	1	0.19	+	5.8	4.4	57.0	4	1	2	3	3	1	5	3	1	5	7	1	1	2.6	0	3.2	2.2
NRC333	1	0.15	+	9.4	5.5	135.0	3	2	1	3	3	1	3	3	1	5	3	2	1	3.3	0	3.9	2.8
NRC334	1	0.12	+	6.2	4.3	52.0	3	1	1	3	3	1	3	1	2	3	3	1	2	2.9	+	3.1	2.2
NRC335	1	0.13	0	5.2	4.7	63.0	2	1	2	3	0	1	3	4	2	5	3	2	2	3.0	0	4.2	2.9
NRC336	1	0.12	0	6.8	4.9	58.5	2	1	1	3	3	1	3	1	1	5	3	3	3	2.5	0	3.5	2.5
NRC337	1	0.10	0	5.9	4.3	62.0	2	1	2	3	3	1	5	3	1	5	7	1	1	3.0	0	3.6	2.8
NRC338	1	0.13	+	6.7	5.0	68.0	3	1	1	7	3	1	5	2	2	5	3	1	1	3.1	+	3.0	2.1
NRC339	1	0.12	0	5.6	4.9	70.3	2	1	1	3	3	1	7	1	1	3	3	2	2	2.5	0	3.4	2.6
NRC340	1	0.12	+	6.4	4.4	88.0	2	0	2	3	3	1	3	3	1	3	7	2	2	2.5	0	3.6	2.6
NRC341	1	0.11	+	5.6	4.9	57.0	3	1	1	3	3	1	3	3	2	5	3	1	1	2.9	+	3.1	2.4
NRC342	1	0.13	+	6.2	5.3	78.0	2	1	1	7	7	1	3	3	1	3	3	2	1	2.8	+	3.3	2.5

DF01	DF39	DF40	DF41	DF42-1	DF42-2	DF43	DF44	DF45	DF46	DF47	DF48	DF49	DF50	DF51	DF52	DF53	DF54	DF55	DF56	DF57	DF58	DF59-1	DF59-2
NRC343	1	0.11	+	4.4	4.1	41.0	2	1	1	3	3	1	5	1	2	5	7	1	1	2.6	0	3.0	2.5
NRC344	1	0.13	+	5.6	4.7	54.5	3	1	1	3	3	1	3	3	2	5	3	2	1	3.0	0	2.9	2.4
NRC345	1	0.13	0	5.9	5.1	70.8	3	1	1	3	3	1	3	1	1	5	7	1	1	2.9	+	3.2	2.4
NRC346	1	0.14	+	8.0	4.5	88.0	1	1	1	3	3	1	3	1	2	5	7	1	1	3.3	+	3.5	2.5
NRC347	1	0.10	0	5.8	4.1	52.0	3	1	1	3	3	1	5	1	2	5	7	1	1	2.8	+	3.1	2.2
NRC348	1	0.14	+	6.0	4.3	69.0	3	1	1	3	7	1	3	1	2	5	7	1	1	3.3	+	3.1	2.4
NRC349	1	0.14	0	5.8	4.8	64.0	2	2	1	3	7	1	5	3	1	5	7	2	1	3.4	0	3.3	2.5
NRC350	1	0.08	+	5.8	4.2	50.0	3	1	1	3	3	1	5	3	2	5	7	1	1	2.9	0	3.0	2.4
NRC351	1	0.15	0	5.7	4.6	64.0	3	1	1	3	3	1	3	2	2	5	7	1	1	2.8	0	2.7	2.4
NRC352	1	0.13	+	5.7	4.5	64.0	2	1	1	3	3	1	3	1	1	5	7	1	1	2.9	0	3.3	2.6
NRC353	1	0.16	+	4.3	4.7	45.0	3	1	1	7	7	1	3	2	2	5	3	2	1	2.9	0	2.9	2.4
NRC354	1	0.12	0	6.5	5.4	85.0	3	2	1	7	7	1	3	3	1	5	3	1	1	3.3	0	3.3	2.6
NRC355	1	0.15	0	7.0	5.3	79.0	3	2	1	3	3	1	3	2	1	5	7	1	1	3.4	+	3.3	2.8
NRC356	1	0.13	+	5.5	4.7	61.0	2	1	1	3	3	1	5	1	1	5	3	1	1	3.1	0	3.4	2.6
NRC357	1	0.14	0	5.4	4.8	68.0	3	1	2	3	7	1	3	3	2	5	3	2	1	2.5	0	2.8	2.3
NRC358	1	0.12	+	6.5	4.6	76.0	2	1	1	3	3	1	5	1	2	5	3	1	1	2.6	+	3.0	2.3
NRC359	1	0.13	0	5.6	5.0	70.0	2	1	1	3	3	1	3	3	2	5	3	1	1	2.8	0	3.1	2.5
NRC360	1	0.15	+	5.4	4.8	67.0	4	1	1	3	7	1	3	3	2	5	7	1	1	2.5	0	3.0	2.2
NRC361	1	0.11	0	4.6	4.2	48.0	3	1	1	3	7	1	3	3	2	5	7	1	1	2.5	0	2.7	2.0
NRC362	1	0.15	+	7.8	4.5	107.0	4	1	1	3	3	1	5	1	1	5	3	2	2	2.8	+	3.9	2.8
NRC363	1	0.11	+	4.5	4.4	46.0	1	1	1	3	3	1	3	3	2	5	7	1	1	2.5	+	2.9	2.2

DF01	DF59-3	DF60	DF61	DF62	DF63	DF64	DF65	DF66-1	DF66-2	DF66-3	DF67	DF68
NRC256	1.4	66	64.0	7.5	32.7	1.9	3	2.9	1.2	1.1	3	7.78
NRC257	1.5	66	61.2	4.7	33.5	2.1	3	2.8	1.2	1.1	3	4.13
NRC258	1.6	57	43.7	9.2	29.5	1.8	3	2.6	1.2	1.1	3	5.67
NRC259	1.6	57	47.4	4.8	33.1	2.1	3	2.9	1.3	1.1	3	3.85
NRC260	1.7	100	53.7	5.8	29.6	2.2	3	2.7	1.2	1.1	7	8.11
NRC261	1.4	56	62.2	7.9	31.4	2.0	3	2.7	1.2	1.1	3	4.18
NRC262	1.9	51	54.4	4.5	33.5	2.3	3	2.6	1.0	1.4	7	7.00
NRC263	1.9	61	47.1	6.2	34.0	2.8	3	2.8	1.0	1.5	7	5.53
NRC264	1.9	61	57.2	9.4	32.0	2.2	3	2.5	1.1	1.3	7	6.13
NRC265	1.9	48	60.1	9.2	33.8	2.3	3	2.7	1.0	1.3	3	4.50
NRC266	1.6	42	54.8	6.1	31.6	1.4	7	2.2	1.0	1.1	3	5.14
NRC267	1.5	78	59.1	8.3	28.0	1.6	3	2.5	1.0	1.1	3	6.42
NRC268	1.6	97	58.5	6.1	33.1	1.9	3	2.6	1.1	1.1	3	5.89

DF01	DF59-3	DF60	DF61	DF62	DF63	DF64	DF65	DF66-1	DF66-2	DF66-3	DF67	DF68
NRC269	2.3	92	37.4	6.9	21.4	3.5	7	3.6	1.3	1.4	7	3.70
NRC270	2.1	74	45.9	8.6	22.3	2.6	7	3.3	2.1	1.2	3	6.10
NRC271	2.1	66	41.5	3.8	31.6	3.3	3	3.2	2.2	1.2	3	6.55
NRC272	2.0	80	61.8	5.9	27.0	2.5	3	3.0	2.0	1.4	7	6.77
NRC273	3.1	68	55.5	6.4	28.0	3.0	3	3.0	2.0	1.5	7	7.10
NRC274	1.8	54	20.8	13.6	31.3	1.4	3	2.7	1.6	1.0	3	4.85
NRC275	2.1	72	54.3	7.0	26.3	2.8	3	3.2	2.2	1.3	3	5.30
NRC276	1.8	64	59.6	5.9	30.3	2.8	3	3.1	1.9	1.2	3	6.10
NRC277	2.5	55	38.1	9.0	29.0	3.0	3	2.8	1.9	1.7	7	5.21
NRC278	2.4	66	34.8	7.0	21.6	2.5	7	2.9	1.9	1.6	7	4.21
NRC279	2.1	66	48.0	5.2	26.0	3.1	3	3.3	2.0	1.4	7	6.19
NRC280	2.0	56	76.9	6.1	27.0	2.7	3	3.0	1.9	1.2	3	5.91
NRC281	1.7	56	19.4	6.3	32.0	1.5	3	2.8	1.7	1.0	3	5.21
NRC282	2.0	64	43.1	8.0	30.0	2.5	3	2.9	1.9	1.2	3	5.60
NRC283	1.5	84	36.1	11.8	29.6	2.4	3	3.2	2.0	1.1	3	5.98
NRC284	1.9	88	36.7	10.4	30.0	1.7	3	2.6	1.6	1.1	3	4.71
NRC285	1.5	58	47.8	12.8	31.3	1.5	3	2.5	2.0	1.1	3	3.48
NRC286	1.9	90	68.3	8.1	20.5	1.9	3	2.9	1.9	1.2	3	3.40
NRC287	1.5	100	62.7	6.8	19.0	1.8	3	3.1	1.9	1.1	3	9.68
NRC288	1.5	90	64.9	5.5	24.4	2.4	3	3.3	1.9	1.0	7	9.12
NRC289	1.5	90	61.0	11.6	23.2	1.5	7	2.4	1.3	1.1	3	6.77
NRC290	1.5	90	64.4	6.0	21.4	1.9	3	3.1	1.9	1.0	3	5.30
NRC291	1.6	90	65.7	8.0	21.4	1.8	3	3.1	1.7	1.0	7	10.38
NRC292	1.5	110	62.1	12.3	29.0	2.4	3	2.8	1.6	1.2	3	7.27
NRC293	1.5	110	64.7	8.3	17.7	1.5	3	3.1	1.8	1.0	3	4.60
NRC294	1.5	60	65.0	6.9	22.4	1.4	7	2.6	1.6	1.2	3	6.82
NRC295	1.5	110	60.7	9.9	29.2	1.9	3	2.8	1.8	0.9	3	5.03
NRC296	1.5	90	60.6	7.5	21.1	1.1	3	2.3	1.1	1.1	7	4.71
NRC297	1.4	90	74.6	9.0	30.1	2.0	3	2.7	1.7	1.0	3	8.38
NRC298	1.8	110	58.8	2.0	29.7	1.8	7	2.4	1.7	1.3	3	3.26
NRC299	1.8	100	59.2	9.1	26.6	1.6	3	2.2	1.6	1.0	3	16.55
NRC300	1.4	100	63.6	4.6	27.0	1.9	3	2.6	1.5	1.1	7	5.51
NRC301	2	110	62.1	15.55	28.2	3.1	3	3.35	2.30	1.5	7	15.80
NRC302	1.8	90	63.6	4.21	30.1	2.6	7	3.20	1.95	1.2	7	12.37
NRC303	1.8	100	71.4	7.88	29.4	1.9	3	2.45	1.75	1.3	7	14.63
NRC304	1.3	80	53.6	7.97	30.3	1.6	3	2.68	1.75	0.9	3	14.15
NRC305	1.7	90	64.0	9.11	27.8	1.7	3	2.70	1.65	1.2	7	14.58
NRC306	1.9	90	48.1	8.38	28.5	1.7	2	2.65	1.75	1.3	7	16.36

DF01	DF59-3	DF60	DF61	DF62	DF63	DF64	DF65	DF66-1	DF66-2	DF66-3	DF67	DF68
NRC307	1.7	100	66.7	8.77	25.8	1.6	3	2.45	1.65	1.4	7	14.09
NRC308	1.2	90	66.7	7.17	33.4	1.5	3	2.85	1.75	0.8	3	18.76
NRC309	1.5	80	72.0	13.24	29.0	1.5	7	2.90	1.75	1.0	7	12.65
NRC310	1.6	100	65.5	16.01	28.0	1.4	3	2.63	1.75	1.1	7	15.64
NRC311	1.7	70	56.3	13.66	30.4	2.1	3	2.83	1.75	1.3	7	12.38
NRC312	1.4	90	69.2	8.70	30.5	1.7	3	2.85	1.85	1.0	3	16.58
NRC313	1.7	80	48.5	6.89	27.5	1.8	3	2.83	1.95	1.1	3	20.16
NRC314	1.6	90	72.0	9.03	34.3	1.8	3	2.65	1.75	1.1	3	15.65
NRC315	1.4	90	64.0	12.30	30.9	1.6	3	2.60	1.65	1.0	7	14.76
NRC316	1.8	100	75.9	13.54	24.8	1.6	3	2.65	1.90	1.3	7	19.90
NRC317	1.4	80	50.0	7.89	25.2	1.3	7	2.65	1.65	0.8	7	14.38
NRC318	1.3	110	72.7	7.42	35.7	1.5	7	2.60	1.55	1.0	3	18.64
NRC319	1.3	110	70.0	7.97	35.5	1.5	7	2.55	1.55	1.0	3	17.17
NRC320	1.7	100	66.7	6.66	31.5	2.0	7	2.90	1.70	1.3	7	18.38
NRC321	1.9	90	46.8	9.1	34.4	2.6	3	2.5	1.56	1.4	3	15.59
NRC322	1.7	100	61.0	15.9	39.5	1.7	3	2.36	1.5	1.2	3	18.40
NRC323	2.2	110	48.0	8.3	34.5	4.0	3	3.38	1.98	1.5	3	14.86
NRC324	1.9	95	54.0	10.9	37.0	3.0	3	2.78	1.9	1.4	3	18.63
NRC325	1.7	80	68.4	15.3	39.9	1.9	7	2.36	1.72	1.1	3	12.77
NRC326	1.8	100	45.3	7.4	33.3	2.3	3	2.6	1.62	1.3	3	18.74
NRC327	1.5	115	54.0	18.1	40.3	2.9	3	2.88	1.92	1.1	3	15.96
NRC328	2.2	110	47.1	12.0	30.5	2.5	3	2.44	1.68	1.5	3	16.69
NRC329	1.6	115	37.9	11.9	29.2	1.4	7	2.4	1.66	1.0	7	13.91
NRC330	1.5	90	58.4	11.4	36.9	2.4	3	2.82	1.62	1.1	3	18.71
NRC331	1.8	110	54.6	9.5	35.4	2.8	3	2.88	2	1.4	3	17.90
NRC332	1.9	85	37.7	8.4	27.6	1.9	3	2.48	1.48	1.2	3	12.86
NRC333	2.1	100	56.6	11.5	34.2	4.0	3	3.2	2.06	1.4	7	14.07
NRC334	1.3	90	63.3	8.0	32.3	2.1	3	2.31	1.61	1.3	3	17.80
NRC335	1.9	100	29.2	6.6	17.7	1.7	7	2.6	1.44	1.2	3	19.03
NRC336	1.7	95	47.6	8.6	26.5	1.8	3	2.66	1.76	1.1	7	14.27
NRC337	1.9	80	61.9	7.0	30.7	2.7	3	2.7	1.8	1.2	3	12.89
NRC338	1.9	100	43.9	9.9	30.8	2.1	3	2.54	1.74	1.1	3	17.50
NRC339	1.6	90	49.6	9.1	31.2	2.4	3	2.58	1.86	1.1	3	18.77
NRC340	1.6	90	40.1	11.3	29.3	2.3	3	2.56	1.9	0.9	3	12.48
NRC341	1.8	75	47.2	9.2	28.2	1.8	3	2.58	1.64	1.1	7	16.15
NRC342	1.7	90	78.0	15.3	37.3	1.9	3	2.74	1.86	1.2	3	13.88

DF01	DF59-3	DF60	DF61	DF62	DF63	DF64	DF65	DF66-1	DF66-2	DF66-3	DF67	DF68
NRC343	1.7	110	72.3	6.7	41.0	2.5	3	2.54	1.76	1.2	3	14.22
NRC344	1.8	100	72.0	9.2	32.2	1.9	3	2.5	1.74	1.2	3	17.60
DF01	DF59-3	DF60	DF61	DF62	DF63	DF64	DF65	DF66-1	DF66-2	DF66-3	DF67	DF68
NRC345	1.7	90	50.9	12.0	32.2	1.9	3	2.7	1.72	1.2	3	16.13
NRC346	1.9	110	57.8	12.8	30.4	2.1	3	2.84	1.78	1.2	3	24.65
NRC347	1.4	100	69.6	9.5	32.7	1.8	3	2.62	1.62	1.0	3	20.19
NRC348	1.7	115	68.2	11.1	28.4	1.9	3	2.48	1.7	1.2	3	22.58
NRC349	2.1	90	44.0	8.9	31.9	2.3	3	2.76	1.76	1.5	3	26.21
NRC350	1.9	100	38.9	6.7	27.9	1.9	3	2.44	1.74	1.3	3	17.02
NRC351	1.8	105	66.3	10.2	30.2	1.9	3	2.44	1.66	1.4	3	19.46
NRC352	1.8	110	65.0	9.4	30.4	2.1	3	2.74	1.9	1.3	3	27.53
NRC353	1.8	90	56.6	7.4	32.8	2.0	7	2.42	1.76	1.3	3	21.69
NRC354	2.1	80	52.8	11.6	30.1	2.2	3	2.78	1.84	1.3	3	25.95
NRC355	2.0	95	47.3	11.1	29.6	2.1	3	2.76	1.9	1.4	3	18.43
NRC356	1.8	110	69.5	8.8	30.4	2.1	3	2.76	1.92	1.26	3	26.08
NRC357	1.6	95	38.4	9.3	21.9	1.6	3	2.32	1.76	1.26	3	17.35
NRC358	1.6	80	64.1	16.5	30.4	1.4	3	2.36	1.60	1.20	3	16.19
NRC359	2.0	90	43.3	9.0	30.0	2.1	3	2.32	1.62	1.32	7	21.46
NRC360	1.7	100	73.1	14.0	33.3	1.6	3	2.50	1.68	1.18	3	16.24
NRC361	1.6	100	58.8	10.4	30.4	1.4	3	2.30	1.44	1.20	3	20.95
NRC362	1.8	95	44.4	11.1	29.6	2.9	3	3.16	1.98	1.34	3	21.98
NRC363	1.7	90	59.4	7.1	30.8	2.0	3	2.46	1.40	1.28	3	18.65