



Blue Mallee

Establishing a Permanent Eucalyptus Oil Resource

**A report for the Rural Industries Research
and Development Corporation**

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November 1999

RIRDC Publication No 99/163
RIRDC Project No ANU 24A

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ISBN 0 642 58012
ISSN 1440-6845

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Published in November 1999
Printed on environmentally friendly paper by Canprint

Foreword

This project aimed to establish a permanent biodiversity and genetic reserve of the major oil producing eucalypt - *Eucalyptus polybractea* – the blue mallee.

In the last decade, there has been a steady expansion of plantations of the blue mallee particularly by G.R. Davis Pty Ltd at West Wyalong, NSW. The internationally competitive nature of the eucalypt oil industry demands that all operations be most efficient. To this end G.R. Davis, working in conjunction with the Department of Forestry, at ANU and RIRDC have established a breeding program to improve the genetic quality of the planting stock. The first seed from this program is now available at West Wyalong.

To assist the breeding program the project has established a reserve, which includes much of the genetic variation and biodiversity present in the species. This is a permanent, conserved and protected resource representative of the species and is readily available for research, to support plantation development or simply as a conservation reserve to preserve much of the biodiversity present in the species.

This report, a new addition to RIRDC's diverse range of over 400 research publications, forms part of our Essential Oils and Plant Extracts R&D program, which aims to support the growth of a profitable and sustainable essential oils and natural plant extracts industry in Australia.

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Peter Core

Managing Director

Rural Industries Research and Development Corporation

Acknowledgments

The financial support of G. R. Davis and the enthusiastic support of their staff at all levels at West Wyalong were fundamental to the successful completion of the project and this is most gratefully acknowledged. Special mention must be made of the help received from Mr Richard Davis and Mr Andrew Cummin. The staff of the Australian Tree Seed Centre also willingly gave of their time and provided invaluable advice. The ongoing technical support of the staff of the Department of Forestry and RIRDC was also very much appreciated.

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Executive Summary

The RIRDC Project ANU 24A has established a permanent biodiversity and genetic reserve of the major oil producing eucalypt - *Eucalyptus polybractea* – the blue mallee. It contains material from seed collections throughout the species range. The planting is a permanent, conserved, comprehensive and protected resource containing genetic material and biodiversity representative of *Eucalyptus polybractea*. It is not just a valuable ex-situ conservation resource. It is also available (i) for breeding, (ii) for detailed study of the variation present in the species and its causes and (iii) could be developed for seed collection.

The reserve is located on G. R. Davis property at Tallimbalong, West Wyalong, NSW. In detail it contains trees originating from seed collected in eleven different areas throughout the natural range of the blue mallee. Seven of the areas are in NSW and four in Victoria. At collection, in all except one batch, the seed was kept separate by individual trees – these total 27 in NSW and 20 in Victoria. The parent tree identity has been maintained in the reserve.

The planting layout adopted consists of 180 plots each of 10 trees. The 90 western plots are all from NSW and the 90 eastern from Victoria. Each plot contains progeny of one of the parent trees and plots representing trees from the same area are alongside each other. The overall arrangement is a randomised block with three replications.

The trees were planted in October 1997 and developed very well averaging well over 1m. in height by March 1999. An analysis of the variation present has been conducted assessing the height of all trees and leaf oil content, oil quality and the leaf size in two trees in each plot.

The height growth figures have allowed subdivision of the site into plots with above average, average and below average growth in the 17 months. In general the NSW material has grown faster than the Victorian. However, there are large differences between progeny of different trees and the rankings of some trees change on the different site types. This may indicate some progenies are better suited to poorer sites and some to the better sites. There are also very large differences between trees within any one plot and this makes it difficult to draw conclusions as to relative vigour.

Similar variation was recorded with two of the other features examined. Oil yields, as a proportion of leaf dry weight, varied between 1% and 16%, and mean leaf area between 0.4 and 7.5 sq cm. The NSW seed sources gave trees with higher oil yields than the Victorian sources but of slightly poorer quality. However there were large variations between progeny of individual trees and also between trees within the one progeny. In contrast cineole content of the oil is indicative of oil quality and this was consistently high between 80 and 92%.

The results generally confirm the results of previous, less comprehensive studies, which also found extreme variation. The NSW material gave higher oil yields than the Victorian but poorer quality.

In summary therefore the trees have grown very well and the initial assessments have indicated there is extreme variation present in the resource. Such variation is typical of the species and it

indicates the resource contains material representative of the species. The objective of setting up such a reserve has thus been achieved.

The establishment of this resource with 11 different seed sources and numerous individual progenies in a single uniform environment means there can now be very detailed examination of the variation patterns. It presents a unique opportunity to examine and determine the cause of the extreme variation in a mallee species of eucalypt. The degree of variation exhibited in almost every feature examined in this species means that such a study could yield unexpected and probably invaluable information on the species, its breeding habits and possibly its history. It may produce guidelines for ecological management of trees in semi arid regions.

Interested parties will be made aware of this resource and the availability of detailed maps and information.

Introduction

Eucalyptus oil production in Australia is currently about 110t per annum whilst the world production is 3000t. The industry is dominated by low cost oil from *Eucalyptus. globulus* in China (1600t annum). To compete, Australian production must be of high quality and produced as efficiently as possible. The blue mallee (*Eucalyptus polybractea*) produces high quality oil and is harvested at West Wyalong in NSW by G. R. Davis Pty Ltd. This company have ongoing plantation operations and, working with RIRDC and the Department of Forestry at ANU, have set up a breeding program.

Expansion of the industry is planned. Eucalypt oil plantations based on mallee species have agroforestry and land rehabilitation potential in low rainfall areas subject to drought and salinity problems. In Western Australia, major land conservation programs are in place based on the use of mallees. Similar developments in other low rainfall areas are possible.

The increased use of plantations and the development of breeding programs demand full understanding of the species performance under different conditions and of its variation especially genetic variation. The project has established a reserve, which includes collections from throughout the *E. polybractea* range. It includes much of the genetic variation present in the species and is a permanent, conserved and protected resource representative of the species. It is readily available for research or plantation use.

This report describes the establishment of the reserve and details the trees included and their early growth. Assessments of the trees' oil production, oil quality and their leaf size are also covered.

Recommendations for the use of the resource are included in the Discussion section.

Objective

The objective of the project was to establish a permanent, readily accessible and protected genetic resource of *Eucalyptus polybractea*.

The trees included would represent a cross section from much of the species range and be a permanent reservoir of the genetic variation present in the species. The resource would be managed for conservation, for research or for general use involving production of seed, cuttings or other material.

The planting would be an ex-situ reserve and provide fall back material if the original sources are destroyed or otherwise become unavailable.

The collection of the different sources established in a common location would allow detailed comparisons between seed sources and individual parents. As such it could provide guidelines for further development of the breeding program and allow the taxonomic status of the species, which is currently confused, to be clarified.

Establishment of the Resource

Methodology

Seed Collection

Seed was collected by CSIRO tree seed centre from seven locations in NSW and four in Victoria. Details of the seed sources and the material used are summarised in Table 1. Further information on these collections is available from the Australian Tree Seed Centre in the CSIRO Division of Forestry, Yarralumla, Canberra.

The collection from each location was comprehensive and included seed from several different and well separate trees. Within each batch the seed from each individual parent was kept separate except for one batch from Victoria (V11) where the seed, from ten trees, was bulked.

Nursery

Seed was sown in the ANU plant culture facility on 17/4/97.

The seed was broadcast sown in a perlite, vermiculite 1:1 mix with a trace of aquasol and fungarid watered in before sowing. Germination commenced about 1 week after sowing.

Germination was rapid but the seedling development extremely variable.

Transplanting to individual (10cm diameter) pots took place in late June, using the same soil mix. The extreme size variation made transplanting difficult. The large size of some seedlings demanded they be transplanted but the small size of others in the same punnet meant their transplanting was really too early and thus difficult. Some losses occurred. There were also losses due to powdery mildew although this was controlled by fungarid.

Seedlings were hardened off in the shade house and moved to West Wyalong under cover in adapted minibuses on 13/10/97 and 19/10/97 and kept under cover at Tallimbalong nursery until planting. They were sprayed twice with Previcure to control the mildew at Tallimbalong before planting.

Site Location and Preparation

The planting site is in the Mud Hut area of G. R. Davis property at Tallimbalong, West Wyalong, alongside the road into the area and approximately 1km from the Tallimba road entrance. The soil is red clay/loam with shale fragments. It is level with minor watercourses crossing and is alongside an existing plantation. The area was cleared and slashed, sprayed with Roundup, had rows marked at 3m and deep ripped with winged ripper to 75cm, worked twice with chisel plough and roller, ridged, chisel ploughed and harrowed to form the bed. All this work was done by the local Tallimbalong staff.

Table 1. Summarised Details of Seed Collections used in Project ANU 24A. The number of trees in each collection is noted - most collections were kept separate by individual trees but V11 is a mix from 10 trees.

Project No	CSIRO Batch	Location Lat	Long	Alt	Date	No of trees	Description (see seed collection data sheets also)
N 1	18582	33.52	146.46	300	11/92	5	15.5 km E of Weethalle on Mid-Western Highway towards West Wyalong (WW). Mallees in narrow strip adjacent to W highway - generally multiple stems to 6m high.
N 2	18583	33.53	147.03	300	11/92	2	16 km W of WW on Mid W. Highway towards Weethalle, near Cattle lane. Mallees alongside road - generally multiple stems to 7m
N 3	18584	33.54	147.05	300	11/92	3	11-13 km W of WW on Mid W Highway towards Weethalle - individual mallees up to 7m
N 4	18585	33.56	147.14	260	11/92	2	W Wyalong town southern outskirts near water treatment and power station 3 individual trees to 12m - nb very variable may be hybrids?
N 5	19159	33.55	147.12	290	n/a	8	n/a
N 6	19507	33.55	147.12	290	n/a	5	n/a
N 7	19649	33.57	147.00	300	n/a	5	Buddigower Nature Reserve usually multi stemmed to 5m - see sheets for positions
V 8	19361	36.20	143.36	180	3/95	7	Wedderburn Wychitella, Bocca flat Korong Valey Rd. - individuals near road - position only noted on ATSC sheets.
V 9	19362	36.33	143.52	200	3/95	7	Ingelwood, Goldberg mine, Powlet Rd, Arnald West Rd. individual positions only noted on ATSC sheets
V 10	19363	36.36	144.18	180	3/95	7	Various locations in Whipstick forest - individual positions recorded on ATSC sheets
V 11	17433	36.36	144.19	180	6/87	10 bulked	Whipstick Forest , 1.4km from Hartlans Distillery - stand 0.5km in length

Planting

Planting was by machine at Tallimbalong on 21 -22 October 1997, into the rows (3m apart) with 75cm between plants in the rows. However the use of the planting machine meant that alignment across rows was not maintained. This is not important and tree identity can be readily determined.

The use of the machine and three local staff meant the planting was completed in 24 hours. There had been a rainstorm about 10 days previously and soil conditions were excellent.

The plants were watered by flood irrigation in the furrows by the Tallimbalong tankers immediately after planting and subsequently 3 times weekly then scaled down over about a month to once every two weeks (or as necessary).

Survival and subsequent growth was excellent. Losses were very few (approx 20 in 1800) and at assessment on 3/12/97 tree height ranged up to 50cm. The development really was quite outstanding and great credit is due to the efforts of the Tallimbalong staff.

Planting Layout

The detailed planting layout is shown in Figure 1. The overall layout was 180 trees x 10 rows. The unit plots were 10 trees, thus there were 18 plots in each row. The nine plots at the western end of each row were NSW seed sources and the nine at the eastern end Victorian.

The area was divided into six blocks (each 3 plots x 10 rows) with the aim of having a randomised block with 3 replications for each of NSW and Victoria. Thus the three western blocks were NSW and the three eastern Victorian. Each seed batch was represented once in each block with the progeny from the individual trees in the batch in plots alongside each other (see Figure 1). So far as possible each individual tree was represented by 1 plot in each block. However there were insufficient trees of some progeny so the representation was complete in Block 1 and was progressively reduced in Blocks 2 and 3, as stock became unavailable.

Some plots had one or two trees added as fill to make up the 10 trees with the intention of removing these when the trees had established control of the site. This will be done in mid 1999. The plots so affected are shown in Figure 1 and the precise location of the trees in the measure sheets included as Appendix 2.

Plots have been marked by stakes driven to ground level. Those for the NSW plots are coloured yellow and those for the Victorian plots are red. Each is also labelled with the row and plot number – eg 34 represents row 3 plot 4. Pegs in row 10 carry the plot numbers only.

The original parent tree identifiers used by CSIRO have been retained.

Development and Treatment

Early development was excellent and rapid with the biggest trees 1m high by May 1998. Losses at 1/5/98 totalled 79 out of the original 1800 planted (about 4%). There were several causes - none of any importance - planting failures, accidental mechanical damage, attack by hares and some fungal or insect losses.

Excellent development continued although growth over winter became very slow.

Figure 1 Field layout showing (a) seed sources with CSIRO batch number and local number and (b) progeny layout showing parent tree numbers.

(a) CSIRO and Local numbers

PLOT -	NSW - Block 3			NSW - Block 2			NSW - Block 1			row
	N9	N8	N7	N6	N5	N4	N3	N2	N1	
Victoria Block 1 joins	19159-N5	18584-N3	19649-N7	18582-N1	19507-N6	19159-N5	19159-N5	19507-N6	18582-N1	1
	19159-N5	18584-N3	19649-N7	18582-N1	19507-N6	19159-N5	19159-N5	19507-N6	18582-N1	2
	19159-N5	18584-N3	19649-N7	18582-N1	19507-N6	19159-N5	19159-N5	19507-N6	18582-N1	3 R
	19159-N5	18582-N1	19507-N6	18582-N1	19507-N6	19159-N5	19159-N5	19507-N6	18582-N1	4 O
	19159-N5	18582-N1	19507-N6	18583-N2	19507-N6	19159-N5	19159-N5	19507-N6	18582-N1	5 A
	19159-N5	18582-N1	19507-N6	18584-N3	19649-N7	19159-N5	19159-N5	19649-N7	18584-N3	6 D
	19159-N5	18582-N1	19507-N6	18584-N3	19649-N7	19159-N5	19159-N5	19649-N7	18584-N3	7
	19159-N5	18583-N2	19507-N6	18584-N3	19649-N7	19159-N5	19159-N5	19649-N7	18584-N3	8
	19159-N5	18585-N4	19507-N6	18585-N4	19649-N7	19159-N5	19649-N7	19649-N7	18583-N2	9
	19159-N5	18582-N1	19507-N6	18582-N1	19649-N7	19159-N5	19649-N7	19649-N7	18585-N4	10

Victoria - Block 3			Victoria - Block 2			Victoria - Block 1			row
V9	V8	V7	V6	V5	V4	V3	V2	V1	
19363-V10	19362-V9	19361-V8	19361-V8	19363-V10	19362-V9	19361-V8	19363-V10	19362-V9	NSW
19363-V10	19362-V9	19361-V8	19361-V8	19363-V10	19362-V9	19361-V8	19363-V10	19362-V9	Block 3
19363-V10	19362-V9	19361-V8	19361-V8	19363-V10	19362-V9	19361-V8	19363-V10	19362-V9	
19363-V10	17433-V11	19361-V8	19361-V8	19363-V10	19362-V9	19361-V8	19363-V10	19362-V9	joins
19363-V10	17433-V11	19361-V8	19361-V8	19363-V10	19362-V9	19361-V8	19363-V10	19362-V9	
19363-V10	excess	19361-V8	19361-V8	19363-V10	17433-V11	19361-V8	19363-V10	19362-V9	
excess	excess	19361-V8	19361-V8	19363-V10	19363-V10	19361-V8	19363-V10	17433-V11	
excess	excess	19361-V8	19361-V8	19363-V10	19363-V10	19361-V8	19363-V10	18582-N1	
excess	excess	19361-V8	19361-V8	19363-V10	19363-V10	19361-V8	19363-V10	18582-N1	
excess	excess	19361-V8	19361-V8	19363-V10	19363-V10	19361-V8	19363-V10	18582-N1	

**(b) Parent tree numbers
(where infill material is included this is shown with the prefix "+")**

PLOT -N9	N8	N7	N6	N5	N4	N3	N2	N1	row
196	2199	235	2174	156	196	182	143	2175	1
199	2197	313	2175+2169	147	184	195	147	2174	2
199	2189	319	2166	97	199	196	156	2166	3
179	2174	97	2169	97	182+184	174	149	2169	4 R
195	2169	156	2182	149	179	199	97	2170	5 O
182	2166+2169	149	2197	306	195	184	313	2197	6 A
184+179	2175+147	147	2199+2197	313	174	179	306	2199+179	7 D
182	2182+179	97	2189	304+179	184+179	184	235	2189	8
195	2200	147	2200	235	195+196	235	304	2182+2189	9
196	2169	149	2174	319	199+179	319	319	2200	10

V9	V8	V7	V6	V5	V4	V3	V2	V1	row
127	62	39	40	95	69	22	122	67	1
102	69	19	19	123	62	19	123	44	2
96	57	23	39	102	67	23	96	62	3
95	17433	22	23	127	57	4	95	69	4
122+57	17433	4+95+2166	4+143	129+143	67+69	39+143	129	57	5
129+149	73/173+67	40	22+143	122+143	17433	40+143	127+143	43+62+143	6
73/173	73/173	19+179	23+179	96+179	97+179	15+19	102+179	17433	7
73/173+179	73/173+179	23+179	39+179	95+179	102+179	4+179	96	2175+179	8
73/173+147	73/173	39	40	129	129	19	102	2175	9
147	319	40+179	4	96	122	22	122+179	2175	10

Assessment of the Resource

Methodology

All trees were measured in May 1998 and April 1999. Two trees in each plot were assessed for oil production, oil quality (% cineole) and leaf area in January 1999.

Measures

Measures were by graduated height sticks to the highest point of each tree.

Determination of Leaf Oil Quantity and Content.

A representative sample of leaves was collected from the first two, well developed, trees in each plot. These were stored in ventilated plastic bags in an ice chest and transferred to Canberra. 5g of leaf fresh weight was placed in ethanol and the extract after three weeks used to determine the oil quantity and constituents using gas chromatography (GC) analysis. The procedure is detailed in Appendix 1

Leaf dry weight was determined by drying at 70°C until stable.

Results were calculated for both fresh and dry weight. Although dry weight is the reliable and repeatable procedure the use of oil per fresh weight is common practice, especially in the field.

Determination of Mean Leaf Area

Leaf area was determined by placing a sample of 10 or 15 leaves on a Hewlett Packard Scanjet scanner.

Results

Height Measures

The results of the height measures have been summarised by seed sources and parent trees in Table 2. Overall seed source N7 had the best average with the trees averaging 125cm in March 1999. However there is considerable variation with standard deviations reaching as much as 50cm.

The overall results may give a false impression as there is some site variation. Using the replicated plots as guides a classification of the site variation has been developed. This is shown in Figure 2.

The site classification by plots (Figure 2) shows a consistent pattern. It is clear that there has been poor growth in all plots in Row 1 and in all the NSW plots numbered 1. Good growth has generally been recorded in all plots numbered 8 and 9 in NSW and those numbered 1 in Victorian material. Height growth results subdivided according to the plot quality is presented in Table 3.

Table 2. Summarised results of the height measures made in May 1998 and March 1999 on the (a) NSW and (b) Victorian material showing the number of trees measured and the mean heights for each parent and each seed source. The standard deviations of the 1999 measures are also shown.

NSW

	Parent	No trees	Av height 5/98 (cm)	Av height 3/99 (cm)	St dev
N1	n2166	29	55	123	36
	n2169	41	62	143	39
	n2170	10	36	93	17
	n2174	39	46	104	32
	n2175	50	59	135	39
N1 Average			52	119	
N2	n2182	29	52	125	52
N3	n2189	28	46	97	34
	n2197	27	48	108	42
	n2199	27	45	94	37
N3 Average			47	100	
N4	n2200	30	56	117	52
N5	n174	19	51	119	32
	n179	63	63	139	34
	n182	36	60	129	53
	n184	42	50	111	33
	n195	46	49	110	36
	n196	39	37	84	35
	n199	46	55	123	28
N5 Average			52	117	
N6	n143	24	53	108	44
	n147	57	51	124	33
	n149	39	59	149	45
	n156	27	48	112	29
	n97	54	60	135	36
N6 Average			54	125	
N7	n235	36	52	121	36
	n304	18	53	125	30
	n306	17	56	105	25
	n313	30	64	150	56
	n319	50	56	120	31
N7 Average			56	124	

(b) Victoria

	Parent	No trees	Av height 5/98 (cm)	Av height 3/99 (cm)	St dev
V8	v15	7	56	116	45
	v19	44	51	116	37
	v22	34	49	112	30
	v23	47	53	111	28
	v39	42	53	111	33
	v4	43	49	114	30
	v40	45	54	121	36
V8 Average			52	114	
V9	v43	4	49	103	61
	v44	7	36	89	39
	v57	27	59	129	19
	v62	35	51	108	34
	v67	22	36	90	29
	v69	31	52	110	38
V9 Average			47	105	
V10	v102	46	49	111	24
	v122	41	51	96	48
	v123	20	56	123	25
	v127	28	52	92	31
	v129	41	53	127	31
	v95	38	47	113	37
	v96	46	55	132	37
V10 Average			52	113	
V11	v17433	37	57	132	28

Figure 2. Showing the site quality classification of individual plots according to the height growth recorded in March 1999.

H = High, A = Average and L = Low

NSW section -

		PLOT 9	PLOT 8	PLOT 7	PLOT 6	PLOT 5	PLOT 4	PLOT 3	PLOT 2	PLOT 1	
VIC SECTION JOINS HERE		L	L	L	L	A	L	L	L	L	ROW 1
		A	H	L	A	A	L	L	L	L	ROW 2
		H	H	A	A	A	L	A	A	L	ROW 3
		H	H	A	A	A	A	A	L	L	ROW 4
		H	H	A	A	H	A	H	A	L	ROW 5
		H	H	A	A	A	A	A	H	L	ROW 6
		H	H	H	H	H	A	A	A	L	ROW 7
		H	H		A	A	L	A	H	L	ROW 8
		H	H	H	A	H	L	H	A	L	ROW 9
		H	A	A	L	H	L	A	A	L	ROW 10

Victorian section –

	PLOT 9	PLOT 8	PLOT 7	PLOT 6	PLOT 5	PLOT 4	PLOT 3	PLOT 2	PLOT 1	
ROW 1	L	L	L	L	L	L	L	L	A	NSW SECTION JOINS HERE
ROW 2		A	A	A	L	A	A	H		
ROW 3		A	A	A	A	A	A	H	H	
ROW 4	A	A	H	A	A	A	H	H	H	
ROW 5	A	A		A	A	A	H	H	H	
ROW 6			A	A	A	A	H	H	H	
ROW 7	L		L	L	A		A	A	H	
ROW 8			A	A	A	H	H	A	H	
ROW 9			A		L	H	A	A	H	
ROW 10			A	L	A	A	A	A	H	

Consideration of the results presented in Table 3 allows some tentative conclusions to be drawn. Overall the NSW material appears to be growing more rapidly than the Victorian but with the two in different positions in the layout (see Figure 1) this may not be a reliable deduction.

However, within the NSW material the rankings of some progenies is definite (Table 3). For example parent n149 in the N6 group does well on all sites whilst n196 in the N5 group is generally poor. However the ranking of some others change with site quality. For example within the material from location N1 parent 2175 has good performance on good and average site quality plots but is growing poorly on the low quality sites. Similarly progeny 2182 is doing well on the good and average sites but poorly on the low quality area. This could indicate some site x progeny interaction.

Variations also occur in the rankings of the Victorian material. Progenies performing well include those of parents 96, 123 and 129 within the v10 group, whilst v127 is comparatively poor. Progeny of v4 in the V8 group are especially variable.

Table 3. Showing the mean heights obtained at the March 1999 measure of the progeny of the individual parents grouped by plot site quality

Origin	Parent	Mean Ht (cm)	Origin	Parent	Mean Ht (cm)
<u>High site quality plots</u>					
N1	n2169	181	V10	v96	160
N1	n2175	157	V10	v129	146
N1	n2166	147	V10	v123	140
N1	n2174	128	V10	v95	136
			V10	v102	129
N2	n2182	177	V10	v127	108
N3	n2199	138	V8	v4	134
N3	n2197	129	V8	v22	133
N3	n2189	122	V8	v39	133
			V8	v40	130
N4	n2200	163	V9	v57	144
N5	n179	174	V9	v69	140
N5	n182	160	V9	v62	127
N5	n199	142			
N5	n195	138		Overall	135
N5	n184	130			
N5	n196	116			
N6	n149	174			
N6	n147	140			
N7	n313	181			
N7	n319	146			
N7	n235	136			
	Overall	149			
<u>Average site quality plots</u>					
N1	n2169	148	V10	v129	138
N1	n2175	126	V10	v96	118
N1	n2166	125	V10	v95	117
			V10	v102	108
N2	n2182	119	V10	v122	104
			V10	v127	98
N3	n2197	114			
N3	n2189	105	V11	v17433	132
N4	n2200	116	V8	v40	123
			V8	v15	116
N5	n179	143	V8	v39	116
N5	n182	136	V8	v22	115
N5	n199	119	V8	v23	114
N5	n184	119	V8	v19	113
N5	n174	119	V8	v4	106
N5	n195	104			
N5	n196	83	V9	v57	121
			V9	v69	114
N6	n149	147	V9	v62	98
N6	n97	134	V9	v67	86
N6	n147	133			
N6	n156	112		Overall	113

Table 3 (cont)

Origin	Parent	Mean Ht (cm)	Origin	Parent	Mean Ht (cm)
<u>Average site quality plots</u>					
<u>(cont)</u>					
N7	n304	123			
N7	n319	114			
N7	n306	106			
	Overall	123			
<u>Low site quality plots</u>					
N1	n2166	102	V10	v123	105
N1	n2174	96	V10	v129	103
N1	n2170	93	V10	v122	72
N1	n2169	93	V10	v127	69
N1	n2175	60			
			V8	v39	107
N2	n2182	73	V8	v40	101
			V8	v23	96
N3	n2199	76	V8	v4	96
N3	n2197	75	V8	v19	91
N3	n2189	67	V8	v22	83
N4	n2200	73	V9	v62	91
			V9	v95	76
N5	n199	106	V9	v69	62
N5	n184	90			
N5	n195	85			
N5	n196	70			
N5	n182	59			
				Overall	82
N6	n149	126			
N6	n147	103			
N7	n313	91			
N7	n235	69			
	Overall	87			

Leaf Oil Quantity and Quality

The results of the oil analysis are summarised by the seed sources in Table 4 and by parents in Table 5.

In general the NSW material gave higher oil production than the Victorian averaging 7.7% of leaf dry weight compared to 5.7%. However the Victorian material was of better average quality - 80% cineole compared to 68% (Table 4).

In all material there was considerable variation – mean oil production varied from 16.5% to 1.0% in NSW and 13.8 to 1.0 in Victorian material. Thus there are high and low oil producers in both NSW and Victorian material. However, the Victorian source V11 may be especially poor. It should be noted these trees are from a bulked seed lot and more intensive study would be needed to confirm the low quality of this source.

Examination of the results by individual parents (Table 5) is more informative. Some parents produce very high quality oil, especially in the NSW material. Trees 2169, 2174, 2175, 2197 averaged over 10% oil per leaf dry weight, whilst 2182, 2200, 97, 306 and 313 were poor averaging 5% or below. The Victorian trees were generally lower than the NSW with seven of the 19 assessed averaging below 5% oil as well as the previously mentioned V11 bulk seed lot.

In contrast to the oil production the oil quality of the Victorian material is generally superior to that of the NSW. Only four NSW parents (2175, 174, 143 and 319) produced progeny with oil averaging above 80% cineole whilst 12 of the 19 Victorians did so notably all of seed source V9.

Leaf area

Leaf area results are also shown in Tables 4 and 5. They show variation also. Although the NSW material on average had larger leaves than the Victorian, 9.39 sq cm as against 7.88, the variation was very large and there were very large leaved and small leaved trees in each. The Victorian tree with the largest leaves averaged 18.24 sq cm whilst and the smallest 2.64.

The differences between individual progeny were again more pronounced. Some progeny had small leaves ie. n319, v23 and v44 all averaging below 6 sq cm in area and others very much larger leaves – NSW n304 20sq cm and n195, n196 and v40 over 12 sq cm

Discussion

The results confirm those of previous studies. Both James(1991) and Grant (1997) found the NSW seed sources gave higher oil yields than the Victorian but the quality (ie. % cineole) was lower

All studies have shown extreme variation in many features in the species. Thus whilst one seed source may on average be generally superior to another there are usually many trees individually well above average in the other sources. It is really only when attention is paid to performance of the progenies of the individual trees that differences can be found. But even within progenies the variation is large. In summary these results are typical for the species.

Table 4. Summarising the results of the assessments of the oil content of the leaves, the percentage of cineole in the oil and the mean individual leaf area of the trees. The results for the oil content are given for both dry and fresh leaf. (Oil content of fresh leaf is of course not precise but it is a useful field measure).

The number of trees sampled in each provenance is shown and in parentheses beneath the mean values are shown the maximum, the minimum and the standard deviation recorded for each measure

Provenance	No trees	Mean oil % (dry wt)	mean cineole %	mean leaf area (sq cm)	mean oil % (fresh wt)
N1	26	9.8 (16.5,6.5,2.4)	78 (89,53,6.9)	6.75 (10.84,4.07,1.62)	4.4 (7.5,2.8,1.1)
N2	5	5.8 (8.6, 2.2,2.9)	59 (80, 37, 15.4)	9.68 (11.97, 7.33, 1.91)	2.5 (3.6, 1.0, 1.2)
N3	20	8.9 15.7, 1.0, 3.8	72 (86, 26,13.70)	7.80 (12.0,4.37, 2.07)	3.9 7.0, 0.5, 1.7
N4	6	5.1 (11.6, n/a, 4.8)	63 (82, 45, 16.84)	9.39 (12.29, 7.4, 1.84)	2.7 (5.1, 0.7, 2.0)
N5	44	9.0 (15.9, 4.3, 2.9)	65 (86, 28, 16.54)	10.01 (23.15, 3.87, 4.16)	4.0 (6.4, 1.9, 1.2)
N6	26	5.9 (11.3, 1.1, 2.5)	69 (90, 17, 20.34)	9.52 (15.61, 5.57, 3.11)	2.6 (5.0, 0.5, 1.1)
N7	29	5.7 (10.9, n/a, 2.9)	62 (90, 22, 18.90)	11.74 (24.66, 3.65, 5.99)	2.6 (4.9, 0.5, 1.1)
Overall NSW	159	7.7 (16.5, 1.0, 3.4)	68 (90, 17, 16.90)	9.39 (24.66, 3.65, 4.06)	3.4 (7.5, 0.5, 1.4)
V8	40	5.4 (13.8, 1.5, 2.78)	75 (92, 30, 15.50)	8.50 (18.24, 3.82, 3.55)	2.3 (5.9, 0.6, 1.20)
V9	32	5.5 (11.5, 1.0, 2.37)	85 (92, 63, 6.06)	7.28 (11.65, 3.95, 1.76)	2.4 (4.6, 0.4, 1.04)
V10	42	6.4 (12.3, n/a, n/a)	82 (92, 25, 10.25)	7.49 (14.26, 3.43,1.77)	2.8 (5.5, 0.4, 1.25)
V11	6	3.3 (6.3, 1.3, 1.97)	72 (85, 46, 13.83)	9.68 (13.70, 6.21, 3.09)	1.4 (2.6, 0.6, 0.86)
Overall VIC	120	5.7 (13.8, 1.0, 2.80)	80 (92, 25, 12.30)	7.88 (18.24, 3.43, 2.61)	2.5 (5.9, 0.4, 1.19)

Table 5. Summarising the results for the progeny of individual parents of the assessments of the oil content of the leaves, the percentage of cineole in the oil and the mean individual leaf area of the trees.

Provenance	Parent	No trees assessed	av oil % dry weight	av cineole%	av leaf area	av oil % fresh weight	
N1	n2166	5	9.1	72	7.49	4.1	
	n2169	7	10.8	79	6.29	4.8	
	n2170	5	8.4	78	5.71	3.8	
	n2174	4	10.5	79	7.92	4.6	
	n2175	5	10.4	83	6.74	4.6	
N2	n2182	5	5.8	59	9.68	2.5	
N3	n2189	7	8.4	76	6.84	3.6	
	n2197	7	10.5	73	7.36	4.6	
	n2199	6	7.4	67	9.44	3.5	
N4	n2200	6	5.1	63	9.39	2.7	
N5	n174	6	9.8	80	7.16	4.3	
	n179	9	9.1	58	11.52	3.9	
	n182	5	9.5	70	8.69	4.1	
	n184	6	9.2	71	7.87	4.1	
	n195	6	7.6	55	12.25	3.4	
	n196	6	8.9	65	12.05	3.8	
	n199	6	9.1	64	9.54	4.0	
	n143	2	4.6	80	6.15	2.0	
	n147	6	5.7	76	9.30	2.5	
	n149	6	8.0	77	7.48	3.6	
	n156	4	7.6	58	11.77	3.2	
	n97	6	3.9	66	11.59	1.7	
	N7	n235	6	5.6	54	11.05	2.4
		n304	5	7.1	49	20.26	3.1
		n306	6	4.7	53	14.04	2.1
n313		6	5.0	73	8.88	2.5	
n319		6	6.2	82	5.89	3.1	

Table 5 (cont)

Provenance	Parent	No trees assessed	av oil % dry weight	av cineole%	av leaf area	av oil % fresh weight
V10	v102	6	4.5	79	6.49	2.0
	v122	8	8.1	81	7.44	3.3
	v123	6	6.6	83	7.95	3.5
	v127	6	4.4	76	6.11	2.0
	v129	6	7.9	81	9.29	3.5
	v95	6	5.7	86	7.64	2.5
	v96	4	7.0	87	7.54	3.0
V11	v17433	6	3.3	72	9.68	1.4
V8	v15	4	4.0	85	6.94	1.7
	v19	8	4.8	82	8.40	2.0
	v22	5	6.4	64	9.08	2.7
	v23	6	4.4	81	5.95	2.0
	v39	6	5.5	77	7.51	2.2
	v4	5	5.8	64	8.43	2.5
	v40	6	7.0	70	12.81	3.1
V9	v44	6	4.5	86	5.49	2.0
	v57	6	3.8	85	7.78	1.7
	v62	8	6.3	88	7.10	2.8
	v67	6	6.5	82	7.47	2.6
	v69	6	6.0	80	8.62	2.7

Discussion

The aim of the project was to establish a permanent genetic/conservation resource of *Eucalyptus polybractea*. The resource established at Tallimbalong is comprehensive in its coverage with material from seven NSW and four Victorian seed sources. There are 27 individual parent trees represented in the NSW material and their progeny have been kept separate. The Victorian material similarly contains progeny of 20 trees from three of the seed collections and the fourth is a bulked seed lot.

The trees have grown very well and the initial assessment of height growth and more importantly oil production, oil quality and leaf size has indicated there is extreme variation in these characteristics present in the resource. Such extreme variation is typical of the species and the existence of such variation in the resource indicates the resource contains material representative of the species. The objective of setting up the reserve has thus been achieved.

The establishment of this resource with 11 different seed sources and numerous individual progenies in a single uniform environment means there can now be very detailed examination of the variation patterns. It would not be an exaggeration to claim that the presence of this material presents a unique opportunity to examine variation in a mallee species of Eucalypt. A topic which has received very little detailed study.

There is a need to examine the taxonomy of *E. polybractea* in particular. The species is very variable phenotypically. Of the 46 trees in a recent collection of seed by the Australian Tree Seed Centre, the Australian Herbarium was only able to positively identify 22 (47%) as *E. polybractea*. Also a thesis by Mr Handmer of the Victorian CNR in 1978 classified five different morphological types of the species in Victoria.

The species may be hybridising and the progeny include several hybrid types. RIRDC Project ANU 19A showed 15% of progeny examined from one tree of *E. polybractea* at West Wyalong could be hybridising with other box species. It is also possible the hybridity is a 'phantom' hybrid - hybridity long established, on a geological time scale, with the other parent no longer present and the variation results from segregation continuing from that ancient event.

Thus a study of the extreme variation exhibited in almost every feature of this species could be expected to yield unexpected and probably invaluable results and provide guidelines to ecological management of the semi arid regions.

In summary therefore this establishment of trees from throughout the *E. polybractea* range in a common environment will -

- (i) allow a comparative examination of *E. polybractea* taxonomy.
- (ii) provide material which could be used for reliable and repeatable seed collections
- (iii) allow identification of high quality genetic material and the collection of such material for general use and research
- (iv) provide an ex-situ conservation collection

Recommendations

To avoid the need for thinning and to ensure the planting is maintained in good condition it is proposed that the usual maintenance and harvesting procedures at Tallimbalong be applied. Thus the trees will be cut back at about 18 month intervals and used for oil production. The use of ground level pegs for labelling ahas been designed to allow such treatment.

The desirability of further studies has been noted above.

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Appendices

Appendix 1 Details of Gas Chromatography Procedures

Technical Data

Solvent :	ethanol
Internal Standard :	n-tetradecane
Gas Chromatograph (GC) Type :	Varian 3400
Column Type:	J&W DB-WAX of 20m x 0.25mm internal diameter & J&W DB-1 of 1m x 0.25mm i.d. (for enhanced separation in the α pinene region)
Carrier Gas :	Nitrogen
Integrator :	Hewlett-Packard 3370A

GC Programme

Initial temperature: 65°C for 3 minutes reaching 90°C in 5°C per minute increments (7 min) then up to 200°C in 20°C increments (10 min).

(Total run time of approx 21 minutes per sample.)

Procedure to determine oil quality and quantity by gas chromatography. (Based on Australian Standard AS 2782-1985©)

nb. The following procedures are for cineole, however the same principles apply to determination of other compounds.

1) Determination of Response Coefficient for Cineole (R_c)

Make up accurate mixture of cineole and internal standard (n-tetradecane) in solvent (SG grade ethanol), such that each component will be approximately equal in the resultant chromatogram. Mix thoroughly and run at least 10 samples on the gas chromatograph (GC).

R_c is calculated as follows:

$$R_c = \frac{M_c \cdot I \cdot A_s}{M_s \cdot I \cdot A_c}$$

where R_c = response coefficient of cineole relative to the internal standard, specific to column type and programme of the GC.

- M_{c1} = mass of cineole present in the mixture
- M_{s1} = mass of internal standard present in mixture
- A_{c1} = area under cineole peak in integrator units.
- A_{s1} = area under internal standard peak in integrator units.

Repeat calculations for 10 samples, accepting mean of results where at least 8 samples are within 1% of each other and excluding outliers.

2) Determination of Cineole Content in a Sample

Accurately weigh out an appropriate amount of the unknown oil (in this case, the leaf tissue). Add to it a known amount of internal standard contained in the solvent, such that the expected concentration of cineole and internal standard will be similar. Allow 2 weeks for extraction to take place.

Determine the percentage of cineole in the tissue by applying the following formula to output from the GC:-

$$\text{cineole concentration (wt/wt \%)} = \frac{100 \times A_c \times M_s}{A_s \times M_c}$$

- where
- R_c = response coefficient previously calculated
 - A_{c2} = area under cineole peak, in integrator units
 - A_{s2} = area under internal standard peak
 - M_{c2} = mass of leaf tissue, converted to dry weight, contained in sample.
 - M_{s2} = mass of internal standard contained in sample.

The Australian Standard demands that a sample be repeated three times and a mean obtained. In substitution of this, in each rack of 15 samples a control vial was included. These controls were a 'cocktail' solution of the 5 constituent compounds in known amounts, made up with the same n-tetradecane/ethanol mixture used for extracting the leaf tissue. Their primary purpose was for determination of response coefficients outlined above. However, any fluctuation in readings by the GC were picked up by comparing controls in successive racks. This technique enabled identification of such problems as septum failure and was used in conjunction with the diagnostic facilities built-in to the GC itself. In combination, these techniques were able to isolate samples where repetition was necessary, and gave confidence that the results were repeatable with a high degree of precision.

Appendix 2 Layout of the reserve

The detail of the layout by rows, plots and individual trees for both the NSW and Victorian sections. The height measures (cm) for 5/98 and 3/99 are also shown.

NSW trees

Victorian trees

Row	Plot	Tree	parent	origin	ht 5/98	ht 3/99	Row	Plot	Tree	parent	origin	ht 5/98	ht 3/99
nr1	p1	1	n2175	N1	-	-	vr1	p1	1	v67	V9	32	90
nr1	p1	2	n2175	N1	-	-	vr1	p1	2	v67	V9	28	70
nr1	p1	3	n2175	N1	-	-	vr1	p1	3	v67	V9	15	65
nr1	p1	4	n2175	N1	20	40	vr1	p1	4	v67	V9	-	30
nr1	p1	5	n2175	N1	-	-	vr1	p1	5	v67	V9	37	95
nr1	p1	6	n2175	N1	22	50	vr1	p1	6	v67	V9	49	115
nr1	p1	7	n2175	N1	36	70	vr1	p1	7	v67	V9	-	-
nr1	p1	8	n2175	N1	38	80	vr1	p1	8	v67	V9	18	80
nr1	p1	9	n2175	N1	28	70	vr1	p1	9	v67	V9	-	-
nr1	p1	10	n2175	N1	30	50	vr1	p1	10	v67	V9	35	95
nr1	p2	1	n143	N6	22	65	vr1	p2	1	v122	V10	32	60
nr1	p2	2	n143	N6	21	65	vr1	p2	2	v122	V10	-	-
nr1	p2	3	n143	N6	20	40	vr1	p2	3	v122	V10	17	65
nr1	p2	4	n143	N6	36	50	vr1	p2	4	v122	V10	-	-
nr1	p2	5	n143	N6	21	50	vr1	p2	5	v122	V10	22	90
nr1	p2	6	n143	N6	34	50	vr1	p2	6	v122	V10	38	90
nr1	p2	7	n143	N6	18	45	vr1	p2	7	v122	V10	60	55
nr1	p2	8	n143	N6	-	-	vr1	p2	8	v122	V10	29	70
nr1	p2	9	n143	N6	-	-	vr1	p2	9	v122	V10	24	80
nr1	p2	10	n143	N6	44	60	vr1	p2	10	v122	V10	28	60
nr1	p3	1	n182	N5	50	80	vr1	p3	1	v22	V8	53	100
nr1	p3	2	n182	N5	51	90	vr1	p3	2	v22	V8	33	90
nr1	p3	3	n182	N5	26	65	vr1	p3	3	v22	V8	59	85
nr1	p3	4	n182	N5	14	35	vr1	p3	4	v22	V8	32	105
nr1	p3	5	n182	N5	34	60	vr1	p3	5	v22	V8	34	75
nr1	p3	6	n182	N5	-	-	vr1	p3	6	v22	V8	33	90
nr1	p3	7	n182	N5	20	30	vr1	p3	7	v22	V8	36	65
nr1	p3	8	n182	N5	24	40	vr1	p3	8	v22	V8	-	-
nr1	p3	9	n182	N5	35	70	vr1	p3	9	v22	V8	58	100
nr1	p3	10	n182	N5	37	60	vr1	p3	10	v22	V8	24	40
nr1	p4	1	n196	N5	28	70	vr1	p4	1	v69	V9	50	55
nr1	p4	2	n196	N5	26	70	vr1	p4	2	v69	V9	19	-
nr1	p4	3	n196	N5	34	35	vr1	p4	3	v69	V9	41	90
nr1	p4	4	n196	N5	44	75	vr1	p4	4	v69	V9	-	-
nr1	p4	5	n196	N5	28	65	vr1	p4	5	v69	V9	53	80
nr1	p4	6	n196	N5	37	80	vr1	p4	6	v69	V9	26	50

nr1	p4	7	n196	N5	4	30
nr1	p4	8	n196	N5	30	60
nr1	p4	9	n196	N5	25	60
nr1	p4	10	n196	N5	41	90
nr1	p5	1	n156	N6	34	65
nr1	p5	2	n156	N6	50	95
nr1	p5	3	n156	N6	34	90
nr1	p5	4	n156	N6	58	120
nr1	p5	5	n156	N6	77	120
nr1	p5	6	n156	N6	40	80
nr1	p5	7	n156	N6	62	120
nr1	p5	8	n156	N6	58	120
nr1	p5	9	n156	N6	10	-
nr1	p5	10	n156	N6	40	100
nr1	p6	1	n2174	N1	36	110
nr1	p6	2	n2174	N1	30	70
nr1	p6	3	n2174	N1	53	150
nr1	p6	4	n2174	N1	47	95
nr1	p6	5	n2174	N1	38	100
nr1	p6	6	n2174	N1	30	70
nr1	p6	7	n2174	N1	34	85
nr1	p6	8	n2174	N1	45	105
nr1	p6	9	n2174	N1	40	110
nr1	p7	1	n235	N7	58	95
nr1	p7	2	n235	N7	40	90
nr1	p7	3	n235	N7	25	65
nr1	p7	4	n235	N7	24	55
nr1	p7	5	n235	N7	35	70
nr1	p7	6	n235	N7	-	-
nr1	p7	7	n235	N7	44	65
nr1	p7	8	n235	N7	27	60
nr1	p7	9	n235	N7	-	-
nr1	p7	10	n235	N7	14	55
nr1	p8	1	n2199	N3	40	80
nr1	p8	2	n2199	N3	39	80
nr1	p8	3	n2199	N3	22	60
nr1	p8	4	n2199	N3	12	55
nr1	p8	5	n2199	N3	40	80
nr1	p8	6	n2199	N3	18	75
nr1	p8	7	n2199	N3	50	120
nr1	p8	8	n2199	N3	19	80
nr1	p8	9	n2199	N3	23	55
nr1	p8	10	n2199	N3	-	-
nr1	p9	1	n196	N5	20	55
nr1	p9	2	n196	N5	24	80
nr1	p9	3	n196	N5	26	20

vr1	p4	7	v69	V9	30	75
vr1	p4	8	v69	V9	19	45
vr1	p4	9	v69	V9	26	20
vr1	p4	10	v69	V9	34	80
vr1	p5	1	v95	V10	36	85
vr1	p5	2	v95	V10	32	95
vr1	p5	3	v95	V10	22	50
vr1	p5	4	v95	V10	26	60
vr1	p5	5	v95	V10	-	-
vr1	p5	6	v95	V10	49	100
vr1	p5	7	v95	V10	56	65
vr1	p5	8	v95	V10	28	80
vr1	p5	9	v95	V10	32	65
vr1	p5	10	v95	V10	30	85
vr1	p6	1	v40	V8	53	65
vr1	p6	2	v40	V8	44	115
vr1	p6	3	v40	V8	45	95
vr1	p6	4	v40	V8	21	40
vr1	p6	5	v40	V8	34	80
vr1	p6	6	v40	V8	41	130
vr1	p6	7	v40	V8	46	115
vr1	p6	8	v40	V8	56	135
vr1	p6	9	v40	V8	50	130
vr1	p7	1	v39	V8	69	90
vr1	p7	2	v39	V8	44	85
vr1	p7	3	v39	V8	26	40
vr1	p7	4	v39	V8	68	75
vr1	p7	5	v39	V8	37	70
vr1	p7	6	v39	V8	-	-
vr1	p7	7	v39	V8	51	100
vr1	p7	8	v39	V8	56	70
vr1	p7	9	v39	V8	50	115
vr1	p7	10	v39	V8	63	90
vr1	p8	1	v62	V9	48	105
vr1	p8	2	v62	V9	40	80
vr1	p8	3	v62	V9	46	115
vr1	p8	4	v62	V9	50	115
vr1	p8	5	v62	V9	38	30
vr1	p8	6	v62	V9	50	100
vr1	p8	7	v62	V9	39	90
vr1	p8	8	v62	V9	50	75
vr1	p8	9	v62	V9	30	100
vr1	p8	10	v62	V9	48	100
vr1	p9	1	v127	V10	46	90
vr1	p9	2	v127	V10	38	85
vr1	p9	3	v127	V10	42	25

nr1	p9	4	n195	N5	31	80
nr1	p9	5	n196	N5	53	105
nr1	p9	6	n196	N5	48	115
nr1	p9	7	n196	N5	38	75
nr1	p9	8	n196	N5	11	75
nr1	p9	9	n196	N5	40	70
nr1	p9	10	n196	N5	39	80
nr2	p1	1	n2174	N1	46	85
nr2	p1	2	n2174	N1	61	75
nr2	p1	3	n2174	N1	48	85
nr2	p1	4	n2174	N1	-	-
nr2	p1	5	n2174	N1	57	100
nr2	p1	6	n2174	N1	51	120
nr2	p1	7	n2174	N1	35	95
nr2	p1	8	n2174	N1	39	85
nr2	p1	9	n2174	N1	63	110
nr2	p1	10	n2174	N1	52	100
nr2	p2	1	n147	N6	39	90
nr2	p2	2	n147	N6	29	90
nr2	p2	3	n147	N6	34	90
nr2	p2	4	n147	N6	44	95
nr2	p2	5	n147	N6	42	70
nr2	p2	6	n147	N6	44	90
nr2	p2	7	n147	N6	72	155
nr2	p2	8	n147	N6	50	120
nr2	p2	9	n147	N6	57	120
nr2	p2	10	n147	N6	51	115
nr2	p3	1	n195	N5	24	80
nr2	p3	2	n195	N5	21	60
nr2	p3	3	n195	N5	28	90
nr2	p3	4	n195	N5	33	40
nr2	p3	5	n195	N5	33	70
nr2	p3	6	n195	N5	54	90
nr2	p3	7	n195	N5	56	110
nr2	p3	8	n195	N5	59	90
nr2	p3	9	n195	N5	15	-
nr2	p3	10	n195	N5	40	70
nr2	p4	1	n184	N5	40	70
nr2	p4	2	n184	N5	47	85
nr2	p4	3	n184	N5	46	100
nr2	p4	4	n184	N5	32	75
nr2	p4	5	n184	N5	37	95
nr2	p4	6	n184	N5	51	80
nr2	p4	7	n184	N5	40	120
nr2	p4	8	n184	N5	58	110
nr2	p4	9	n184	N5	49	105

vr1	p9	4	v127	V10	53	75
vr1	p9	5	v127	V10	38	80
vr1	p9	6	v127	V10	41	70
vr1	p9	7	v127	V10	67	60
vr1	p9	8	v127	V10	21	60
vr1	p9	9	v127	V10	-	-
vr1	p9	10	v127	V10	30	75
vr2	p1	1	v44	V9	6	20
vr2	p1	2	v44	V9	-	-
vr2	p1	3	v44	V9	39	90
vr2	p1	4	v44	V9	29	95
vr2	p1	5	v44	V9	44	80
vr2	p1	6	v44	V9	51	120
vr2	p1	7	v44	V9	37	70
vr2	p1	8	v44	V9	44	145
vr2	p1	9	v44	V9	-	-
vr2	p1	10	v44	V9	-	-
vr2	p2	1	v123	V10	74	125
vr2	p2	2	v123	V10	51	125
vr2	p2	3	v123	V10	70	170
vr2	p2	4	v123	V10	44	135
vr2	p2	5	v123	V10	67	125
vr2	p2	6	v123	V10	79	150
vr2	p2	7	v123	V10	52	125
vr2	p2	8	v123	V10	60	160
vr2	p2	9	v123	V10	41	140
vr2	p2	10	v123	V10	68	140
vr2	p3	1	v19	V8	46	110
vr2	p3	2	v19	V8	-	-
vr2	p3	3	v19	V8	75	135
vr2	p3	4	v19	V8	43	100
vr2	p3	5	v19	V8	73	110
vr2	p3	6	v19	V8	51	120
vr2	p3	7	v19	V8	-	-
vr2	p3	8	v19	V8	30	20
vr2	p3	9	v19	V8	53	125
vr2	p3	10	v19	V8	40	115
vr2	p4	1	v62	V9	61	130
vr2	p4	2	v62	V9	47	110
vr2	p4	3	v62	V9	60	100
vr2	p4	4	v62	V9	41	100
vr2	p4	5	v62	V9	38	65
vr2	p4	6	v62	V9	45	80
vr2	p4	7	v62	V9	45	90
vr2	p4	8	v62	V9	42	90
vr2	p4	9	v62	V9	48	100

nr2	p4	10	n184	N5	43	80
nr2	p5	1	n147	N6	44	130
nr2	p5	2	n147	N6	64	120
nr2	p5	3	n147	N6	54	135
nr2	p5	4	n147	N6	60	110
nr2	p5	5	n147	N6	65	145
nr2	p5	6	n147	N6	48	165
nr2	p5	7	n147	N6	51	130
nr2	p5	8	n147	N6	35	100
nr2	p5	9	n147	N6	55	145
nr2	p5	10	n147	N6	73	145
nr2	p6	1	n2175	N1	66	175
nr2	p6	2	n2175	N1	50	110
nr2	p6	3	n2169	N1	80	120
nr2	p6	4	n2175	N1	67	145
nr2	p6	5	n2175	N1	77	150
nr2	p6	6	n2175	N1	69	130
nr2	p6	7	n2175	N1	41	95
nr2	p6	8	n2175	N1	45	105
nr2	p6	9	n2169	N1	52	120
nr2	p6	10	n2175	N1	66	120
nr2	p7	1	n313	N7	42	110
nr2	p7	2	n313	N7	63	105
nr2	p7	3	n313	N7	52	100
nr2	p7	4	n313	N7	53	100
nr2	p7	5	n313	N7	40	90
nr2	p7	6	n313	N7	52	100
nr2	p7	7	n313	N7	32	95
nr2	p7	8	n313	N7	22	45
nr2	p7	9	n313	N7	55	115
nr2	p7	10	n313	N7	21	50
nr2	p8	1	n2197	N3	51	105
nr2	p8	2	n2197	N3	56	130
nr2	p8	3	n2197	N3	80	140
nr2	p8	4	n2197	N3	41	-
nr2	p8	5	n2197	N3	32	-
nr2	p8	6	n2197	N3	46	100
nr2	p8	7	n2197	N3	65	140
nr2	p8	8	n2197	N3	65	140
nr2	p8	9	n2197	N3	68	-
nr2	p8	10	n2197	N3	59	145
nr2	p9	1	n199	N5	70	150
nr2	p9	2	n199	N5	60	165
nr2	p9	3	n199	N5	60	120
nr2	p9	4	n199	N5	44	105
nr2	p9	5	n199	N5	59	140

vr2	p4	10	v62	V9	55	110
vr2	p5	1	v123	V10	61	120
vr2	p5	2	v123	V10	50	105
vr2	p5	3	v123	V10	45	115
vr2	p5	4	v123	V10	60	100
vr2	p5	5	v123	V10	60	120
vr2	p5	6	v123	V10	57	130
vr2	p5	7	v123	V10	65	110
vr2	p5	8	v123	V10	55	120
vr2	p5	9	v123	V10	3	50
vr2	p5	10	v123	V10	51	100
vr2	p6	1	v19	V8	50	130
vr2	p6	2	v19	V8	40	120
vr2	p6	3	v19	V8	3	-
vr2	p6	4	v19	V8	54	120
vr2	p6	5	v19	V8	39	110
vr2	p6	6	v19	V8	50	110
vr2	p6	7	v19	V8	41	85
vr2	p6	8	v19	V8	42	90
vr2	p6	9	v19	V8	75	150
vr2	p6	10	v19	V8	37	60
vr2	p7	1	v19	V8	48	80
vr2	p7	2	v19	V8	57	110
vr2	p7	3	v19	V8	52	100
vr2	p7	4	v19	V8	76	115
vr2	p7	5	v19	V8	62	110
vr2	p7	6	v19	V8	56	90
vr2	p7	7	v19	V8	70	120
vr2	p7	8	v19	V8	55	155
vr2	p7	9	v19	V8	80	170
vr2	p7	10	v19	V8	62	125
vr2	p8	1	v69	V9	48	110
vr2	p8	2	v69	V9	22	75
vr2	p8	3	v69	V9	83	125
vr2	p8	4	v69	V9	51	125
vr2	p8	5	v69	V9	65	130
vr2	p8	6	v69	V9	66	140
vr2	p8	7	v69	V9	45	110
vr2	p8	8	v69	V9	52	110
vr2	p8	9	v69	V9	80	120
vr2	p8	10	v69	V9	51	90
vr2	p9	1	v102	V10	63	115
vr2	p9	2	v102	V10	56	120
vr2	p9	3	v102	V10	50	85
vr2	p9	4	v102	V10	40	95
vr2	p9	5	v102	V10	52	60

nr2	p9	6	n199	N5	34	80
nr2	p9	7	n199	N5	56	120
nr2	p9	8	n199	N5	31	100
nr2	p9	9	n199	N5	52	90
nr2	p9	10	n199	N5	46	115
nr3	p1	1	n2166	N1	40	95
nr3	p1	2	n2166	N1	51	110
nr3	p1	3	n2166	N1	44	105
nr3	p1	4	n2166	N1	41	85
nr3	p1	5	n2166	N1	41	80
nr3	p1	6	n2166	N1	55	105
nr3	p1	7	n2166	N1	49	115
nr3	p1	8	n2166	N1	51	110
nr3	p1	9	n2166	N1	44	95
nr3	p1	10	n2166	N1	46	115
nr3	p2	1	n156	N6	-	-
nr3	p2	2	n156	N6	3	-
nr3	p2	3	n156	N6	45	105
nr3	p2	4	n156	N6	49	110
nr3	p2	5	n156	N6	44	100
nr3	p2	6	n156	N6	51	100
nr3	p2	7	n156	N6	55	130
nr3	p2	8	n156	N6	76	175
nr3	p2	9	n156	N6	50	130
nr3	p2	10	n156	N6	35	70
nr3	p3	1	n196	N5	44	105
nr3	p3	2	n196	N5	39	95
nr3	p3	3	n196	N5	38	70
nr3	p3	4	n196	N5	36	75
nr3	p3	5	n196	N5	21	80
nr3	p3	6	n196	N5	14	60
nr3	p3	7	n196	N5	21	80
nr3	p3	8	n196	N5	31	80
nr3	p3	9	n196	N5	40	80
nr3	p3	10	n196	N5	41	100
nr3	p4	1	n199	N5	55	115
nr3	p4	2	n199	N5	-	-
nr3	p4	3	n199	N5	66	105
nr3	p4	4	n199	N5	65	130
nr3	p4	5	n199	N5	50	115
nr3	p4	6	n199	N5	39	95
nr3	p4	7	n199	N5	41	105
nr3	p4	8	n199	N5	51	105
nr3	p4	9	n199	N5	48	120
nr3	p4	10	n199	N5	75	130
nr3	p5	1	n97	N6	-	-

vr2	p9	6	v102	V10	50	105
vr2	p9	7	v102	V10	50	100
vr2	p9	8	v102	V10	48	100
vr2	p9	9	v102	V10	44	-
vr2	p9	10	v102	V10	60	125
vr3	p1	1	v62	V9	60	30
vr3	p1	2	v62	V9	65	125
vr3	p1	3	v62	V9	40	70
vr3	p1	4	v62	V9	43	125
vr3	p1	5	v62	V9	67	125
vr3	p1	6	v62	V9	58	140
vr3	p1	7	v62	V9	74	180
vr3	p1	8	v62	V9	69	180
vr3	p1	9	v62	V9	66	150
vr3	p1	10	v62	V9	42	120
vr3	p2	1	v96	V10	58	135
vr3	p2	2	v96	V10	62	155
vr3	p2	3	v96	V10	64	115
vr3	p2	4	v96	V10	52	185
vr3	p2	5	v96	V10	84	200
vr3	p2	6	v96	V10	81	195
vr3	p2	7	v96	V10	76	150
vr3	p2	8	v96	V10	79	145
vr3	p2	9	v96	V10	72	140
vr3	p2	10	v96	V10	79	180
vr3	p3	1	v23	V8	56	130
vr3	p3	2	v23	V8	53	110
vr3	p3	3	v23	V8	75	150
vr3	p3	4	v23	V8	54	125
vr3	p3	5	v23	V8	65	125
vr3	p3	6	v23	V8	66	115
vr3	p3	7	v23	V8	66	130
vr3	p3	8	v23	V8	39	95
vr3	p3	9	v23	V8	57	115
vr3	p3	10	v23	V8	42	110
vr3	p4	1	v67	V9	50	110
vr3	p4	2	v67	V9	4	90
vr3	p4	3	v67	V9	50	90
vr3	p4	4	v67	V9	39	95
vr3	p4	5	v67	V9	-	-
vr3	p4	6	v67	V9	4	-
vr3	p4	7	v67	V9	39	115
vr3	p4	8	v67	V9	-	-
vr3	p4	9	v67	V9	31	20
vr3	p4	10	v67	V9	46	80
vr3	p5	1	v102	V10	51	105

nr3	p5	2	n97	N6	65	120
nr3	p5	3	n97	N6	75	120
nr3	p5	4	n97	N6	65	130
nr3	p5	5	n97	N6	38	95
nr3	p5	6	n97	N6	-	-
nr3	p5	7	n97	N6	72	135
nr3	p5	8	n97	N6	56	140
nr3	p5	9	n97	N6	70	135
nr3	p5	10	n97	N6	66	130
nr3	p6	1	n2166	N1	68	150
nr3	p6	2	n2166	N1	64	130
nr3	p6	3	n2166	N1	60	145
nr3	p6	4	n2166	N1	55	115
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nr3	p6	6	n2166	N1	52	160
nr3	p6	7	n2166	N1	48	100
nr3	p6	8	n2166	N1	47	120
nr3	p6	9	n2166	N1	47	100
nr3	p6	10	n2166	N1	51	90
nr3	p7	1	n319	N7	67	105
nr3	p7	2	n319	N7	5	35
nr3	p7	3	n319	N7	49	90
nr3	p7	4	n319	N7	63	120
nr3	p7	5	n319	N7	47	110
nr3	p7	6	n319	N7	66	145
nr3	p7	7	n319	N7	70	165
nr3	p7	8	n319	N7	74	130
nr3	p7	9	n319	N7	51	110
nr3	p7	10	n319	N7	52	135
nr3	p8	1	n2189	N3	75	130
nr3	p8	2	n2189	N3	65	120
nr3	p8	3	n2189	N3	50	100
nr3	p8	4	n2189	N3	70	155
nr3	p8	5	n2189	N3	56	140
nr3	p8	6	n2189	N3	4	-
nr3	p8	7	n2189	N3	57	130
nr3	p8	8	n2189	N3	58	130
nr3	p8	9	n2189	N3	36	60
nr3	p8	10	n2189	N3	67	130
nr3	p9	1	n199	N5	66	150
nr3	p9	2	n199	N5	35	100
nr3	p9	3	n199	N5	43	140
nr3	p9	4	n199	N5	54	120
nr3	p9	5	n199	N5	56	160
nr3	p9	6	n199	N5	58	135
nr3	p9	7	n199	N5	38	130

vr3	p5	2	v102	V10	58	110
vr3	p5	3	v102	V10	66	130
vr3	p5	4	v102	V10	70	140
vr3	p5	5	v102	V10	50	110
vr3	p5	6	v102	V10	47	120
vr3	p5	7	v102	V10	43	80
vr3	p5	8	v102	V10	45	45
vr3	p5	9	v102	V10	51	110
vr3	p5	10	v102	V10	50	100
vr3	p6	1	v39	V8	31	65
vr3	p6	2	v39	V8	50	100
vr3	p6	3	v39	V8	86	165
vr3	p6	4	v39	V8	62	120
vr3	p6	5	v39	V8	25	100
vr3	p6	6	v39	V8	40	100
vr3	p6	7	v39	V8	44	150
vr3	p6	8	v39	V8	41	110
vr3	p6	9	v39	V8	60	145
vr3	p6	10	v39	V8	51	135
vr3	p7	1	v23	V8	61	150
vr3	p7	2	v23	V8	52	85
vr3	p7	3	v23	V8	48	110
vr3	p7	4	v23	V8	59	120
vr3	p7	5	v23	V8	56	115
vr3	p7	6	v23	V8	50	105
vr3	p7	7	v23	V8	56	115
vr3	p7	8	v23	V8	39	80
vr3	p7	9	v23	V8	69	120
vr3	p7	10	v23	V8	42	100
vr3	p8	1	v57	V9	70	140
vr3	p8	2	v57	V9	48	115
vr3	p8	3	v57	V9	51	110
vr3	p8	4	v57	V9	46	95
vr3	p8	5	v57	V9	45	120
vr3	p8	6	v57	V9	70	160
vr3	p8	7	v57	V9	60	120
vr3	p8	8	v57	V9	59	120
vr3	p8	9	v57	V9	64	125
vr3	p8	10	v57	V9	78	145
vr3	p9	1	v96	V10	57	130
vr3	p9	2	v96	V10	40	45
vr3	p9	3	v96	V10	63	160
vr3	p9	4	v96	V10	49	120
vr3	p9	5	v96	V10	50	115
vr3	p9	6	v96	V10	51	145
vr3	p9	7	v96	V10	46	135

nr3	p9	8	n199	N5	88	195
nr3	p9	9	n199	N5	51	155
nr3	p9	10	n199	N5	60	115
nr4	p1	1	n2169	N1	39	100
nr4	p1	2	n2169	N1	-	-
nr4	p1	3	n2169	N1	52	100
nr4	p1	4	n2169	N1	72	110
nr4	p1	5	n2169	N1	24	100
nr4	p1	6	n2169	N1	21	70
nr4	p1	7	n2169	N1	62	90
nr4	p1	8	n2169	N1	39	105
nr4	p1	9	n2169	N1	43	90
nr4	p1	10	n2169	N1	20	75
nr4	p2	1	n149	N6	41	120
nr4	p2	2	n149	N6	44	135
nr4	p2	3	n149	N6	31	135
nr4	p2	4	n149	N6	1	-
nr4	p2	5	n149	N6	74	160
nr4	p2	6	n149	N6	40	150
nr4	p2	7	n149	N6	49	110
nr4	p2	8	n149	N6	42	110
nr4	p2	9	n149	N6	62	130
nr4	p2	10	n149	N6	18	85
nr4	p3	1	n174	N5	60	120
nr4	p3	2	n174	N5	50	100
nr4	p3	3	n174	N5	39	80
nr4	p3	4	n174	N5	75	200
nr4	p3	5	n174	N5	60	120
nr4	p3	6	n174	N5	65	140
nr4	p3	7	n174	N5	4	-
nr4	p3	8	n174	N5	59	120
nr4	p3	9	n174	N5	52	110
nr4	p3	10	n174	N5	51	125
nr4	p4	1	n182	N5	52	120
nr4	p4	2	n184	N5	65	115
nr4	p4	3	n182	N5	84	165
nr4	p4	4	n182	N5	-	-
nr4	p4	5	n182	N5	45	115
nr4	p4	6	n182	N5	56	140
nr4	p4	7	n182	N5	60	130
nr4	p4	8	n182	N5	51	120
nr4	p4	9	n182	N5	75	160
nr4	p4	10	n182	N5	75	140
nr4	p5	1	n97	N6	73	160
nr4	p5	2	n97	N6	60	120
nr4	p5	3	n97	N6	54	125

vr3	p9	8	v96	V10	42	100
vr3	p9	9	v96	V10	51	125
vr3	p9	10	v96	V10	43	140
vr4	p1	1	v69	V9	65	125
vr4	p1	2	v69	V9	51	140
vr4	p1	3	v69	V9	50	90
vr4	p1	4	v69	V9	65	140
vr4	p1	5	v69	V9	62	140
vr4	p1	6	v69	V9	55	170
vr4	p1	7	v69	V9	65	140
vr4	p1	8	v69	V9	58	140
vr4	p1	9	v69	V9	59	175
vr4	p1	10	v69	V9	67	140
vr4	p2	1	v95	V10	62	195
vr4	p2	2	v95	V10	60	140
vr4	p2	3	v95	V10	43	145
vr4	p2	4	v95	V10	55	120
vr4	p2	5	v95	V10	60	95
vr4	p2	6	v95	V10	41	125
vr4	p2	7	v95	V10	60	155
vr4	p2	8	v95	V10	43	115
vr4	p2	9	v95	V10	-	-
vr4	p2	10	v95	V10	70	130
vr4	p3	1	v4	V8	68	135
vr4	p3	2	v4	V8	45	110
vr4	p3	3	v4	V8	64	155
vr4	p3	4	v4	V8	59	145
vr4	p3	5	v4	V8	39	135
vr4	p3	6	v4	V8	61	130
vr4	p3	7	v4	V8	49	140
vr4	p3	8	v4	V8	74	155
vr4	p3	9	v4	V8	-	-
vr4	p3	10	v4	V8	72	140
vr4	p4	1	v57	V9	65	145
vr4	p4	2	v57	V9	-	-
vr4	p4	3	v57	V9	45	115
vr4	p4	4	v57	V9	56	100
vr4	p4	5	v57	V9	70	130
vr4	p4	6	v57	V9	54	125
vr4	p4	7	v57	V9	56	110
vr4	p4	8	v57	V9	44	105
vr4	p4	9	v57	V9	51	95
vr4	p4	10	v57	V9	-	-
vr4	p5	1	v127	V10	40	70
vr4	p5	2	v127	V10	65	115
vr4	p5	3	v127	V10	45	105

nr4	p5	4	n97	N6	41	105
nr4	p5	5	n97	N6	60	120
nr4	p5	6	n97	N6	67	165
nr4	p5	7	n97	N6	84	165
nr4	p5	8	n97	N6	42	140
nr4	p5	9	n97	N6	73	160
nr4	p5	10	n97	N6	77	170
nr4	p6	1	n2169	N1	70	140
nr4	p6	2	n2169	N1	52	170
nr4	p6	3	n2169	N1	57	125
nr4	p6	4	n2169	N1	50	110
nr4	p6	5	n2169	N1	50	120
nr4	p6	6	n2169	N1	77	140
nr4	p6	7	n2169	N1	60	170
nr4	p6	8	n2169	N1	78	130
nr4	p6	9	n2169	N1	42	130
nr4	p6	10	n2169	N1	71	130
nr4	p7	1	n97	N6	49	130
nr4	p7	2	n97	N6	81	165
nr4	p7	3	n97	N6	40	140
nr4	p7	4	n97	N6	3	-
nr4	p7	5	n97	N6	85	175
nr4	p7	6	n97	N6	70	160
nr4	p7	7	n97	N6	96	130
nr4	p7	8	n97	N6	30	15
nr4	p7	9	n97	N6	64	110
nr4	p7	10	n97	N6	75	165
nr4	p8	1	n2174	N1	68	125
nr4	p8	2	n2174	N1	4	40
nr4	p8	3	n2174	N1	56	155
nr4	p8	4	n2174	N1	37	110
nr4	p8	5	n2174	N1	59	140
nr4	p8	6	n2174	N1	49	75
nr4	p8	7	n2174	N1	58	140
nr4	p8	8	n2174	N1	50	135
nr4	p8	9	n2174	N1	77	200
nr4	p8	10	n2174	N1	59	155
nr4	p9	1	n179	N5	80	170
nr4	p9	2	n179	N5	66	190
nr4	p9	3	n179	N5	70	165
nr4	p9	4	n179	N5	88	200
nr4	p9	5	n179	N5	88	210
nr4	p9	6	n179	N5	92	200
nr4	p9	7	n179	N5	63	130
nr4	p9	8	n179	N5	79	190
nr4	p9	9	n179	N5	86	140

vr4	p5	4	v127	V10	38	85
vr4	p5	5	v127	V10	47	75
vr4	p5	6	v127	V10	40	110
vr4	p5	7	v127	V10	38	65
vr4	p5	8	v127	V10	42	120
vr4	p5	9	v127	V10	47	90
vr4	p5	10	v127	V10	54	140
vr4	p6	1	v23	V8	82	140
vr4	p6	2	v23	V8	49	120
vr4	p6	3	v23	V8	65	135
vr4	p6	4	v23	V8	36	100
vr4	p6	5	v23	V8	57	135
vr4	p6	6	v23	V8	40	100
vr4	p6	7	v23	V8	62	160
vr4	p6	8	v23	V8	20	45
vr4	p6	9	v23	V8	70	140
vr4	p6	10	v23	V8	14	70
vr4	p7	1	v22	V8	60	145
vr4	p7	2	v22	V8	65	135
vr4	p7	3	v22	V8	65	145
vr4	p7	4	v22	V8	50	85
vr4	p7	5	v22	V8	60	135
vr4	p7	6	v22	V8	68	160
vr4	p7	7	v22	V8	70	130
vr4	p7	8	v22	V8	55	135
vr4	p7	9	v22	V8	62	130
vr4	p7	10	v22	V8	55	130
vr4	p8	1	v17433	V11	-	-
vr4	p8	2	v17433	V11	84	155
vr4	p8	3	v17433	V11	59	130
vr4	p8	4	v17433	V11	65	115
vr4	p8	5	v17433	V11	66	90
vr4	p8	6	v17433	V11	72	150
vr4	p8	7	v17433	V11	51	130
vr4	p8	8	v17433	V11	72	145
vr4	p8	9	v17433	V11	42	105
vr4	p8	10	v17433	V11	58	135
vr4	p9	1	v95	V10	52	150
vr4	p9	2	v95	V10	36	85
vr4	p9	3	v95	V10	67	120
vr4	p9	4	v95	V10	55	110
vr4	p9	5	v95	V10	66	120
vr4	p9	6	v95	V10	40	100
vr4	p9	7	v95	V10	35	110
vr4	p9	8	v95	V10	48	150
vr4	p9	9	v95	V10	7	20

nr4	p9	10	n179	N5	62	140
nr5	p1	1	n2170	N1	32	100
nr5	p1	2	n2170	N1	21	85
nr5	p1	3	n2170	N1	42	110
nr5	p1	4	n2170	N1	24	80
nr5	p1	5	n2170	N1	38	85
nr5	p1	6	n2170	N1	39	80
nr5	p1	7	n2170	N1	38	85
nr5	p1	8	n2170	N1	27	70
nr5	p1	9	n2170	N1	47	110
nr5	p1	10	n2170	N1	56	125
nr5	p2	1	n97	N6	64	140
nr5	p2	2	n97	N6	57	150
nr5	p2	3	n97	N6	72	185
nr5	p2	4	n97	N6	39	70
nr5	p2	5	n97	N6	66	150
nr5	p2	6	n97	N6	90	180
nr5	p2	7	n97	N6	53	80
nr5	p2	8	n97	N6	41	155
nr5	p2	9	n97	N6	67	195
nr5	p2	10	n97	N6	62	170
nr5	p3	1	n199	N5	72	160
nr5	p3	2	n199	N5	64	135
nr5	p3	3	n199	N5	81	130
nr5	p3	4	n199	N5	44	145
nr5	p3	5	n199	N5	65	140
nr5	p3	6	n199	N5	41	100
nr5	p3	7	n199	N5	-	-
nr5	p3	8	n199	N5	51	150
nr5	p3	9	n199	N5	76	190
nr5	p3	10	n199	N5	63	135
nr5	p4	1	n179	N5	83	160
nr5	p4	2	n179	N5	52	150
nr5	p4	3	n179	N5	72	165
nr5	p4	4	n179	N5	69	155
nr5	p4	5	n179	N5	24	50
nr5	p4	6	n179	N5	61	150
nr5	p4	7	n179	N5	72	165
nr5	p4	8	n179	N5	45	145
nr5	p4	9	n179	N5	73	160
nr5	p4	10	n179	N5	74	140
nr5	p5	1	n149	N6	71	130
nr5	p5	2	n149	N6	51	160
nr5	p5	3	n149	N6	60	160
nr5	p5	4	n149	N6	80	190
nr5	p5	5	n149	N6	84	215

vr4	p9	10	v95	V10	51	140
vr5	p1	1	v57	V9	68	150
vr5	p1	2	v57	V9	68	155
vr5	p1	3	v57	V9	52	140
vr5	p1	4	v57	V9	62	150
vr5	p1	5	v57	V9	56	145
vr5	p1	6	v57	V9	70	140
vr5	p1	7	v57	V9	59	145
vr5	p1	8	v57	V9	58	145
vr5	p1	9	v57	V9	-	-
vr5	p1	10	v57	V9	61	125
vr5	p2	1	v129	V10	63	155
vr5	p2	2	v129	V10	60	135
vr5	p2	3	v129	V10	49	130
vr5	p2	4	v129	V10	60	140
vr5	p2	5	v129	V10	57	120
vr5	p2	6	v129	V10	60	150
vr5	p2	7	v129	V10	64	160
vr5	p2	8	v129	V10	55	125
vr5	p2	9	v129	V10	67	160
vr5	p2	10	v129	V10	52	130
vr5	p3	1	v39	V8	70	150
vr5	p3	2	v39	V8	31	50
vr5	p3	3	v39	V8	76	150
vr5	p3	4	v39	V8	89	185
vr5	p3	5	n143	N6	-	-
vr5	p3	6	v39	V8	69	140
vr5	p3	7	n143	N6	86	140
vr5	p3	8	n143	N6	68	125
vr5	p3	9	n143	N6	80	165
vr5	p3	10	v39	V8	60	125
vr5	p4	1	v69	V9	70	130
vr5	p4	2	v69	V9	63	120
vr5	p4	3	v69	V9	82	145
vr5	p4	4	v67	V9	41	75
vr5	p4	5	v67	V9	44	85
vr5	p4	6	v67	V9	53	120
vr5	p4	7	v67	V9	44	90
vr5	p4	8	v67	V9	5	-
vr5	p4	9	v67	V9	50	105
vr5	p4	10	v67	V9	53	150
vr5	p5	1	v129	V10	57	140
vr5	p5	2	v129	V10	65	160
vr5	p5	3	v129	V10	66	140
vr5	p5	4	v129	V10	67	145
vr5	p5	5	n143	N6	51	100

nr5	p5	6	n149	N6	81	215
nr5	p5	7	n149	N6	70	150
nr5	p5	8	n149	N6	61	190
nr5	p5	9	n149	N6	63	175
nr5	p5	10	n149	N6	59	150
nr5	p6	1	n2182	N2	44	95
nr5	p6	2	n2182	N2	29	95
nr5	p6	3	n2182	N2	58	145
nr5	p6	4	n2182	N2	51	105
nr5	p6	5	n2182	N2	39	85
nr5	p6	6	n2182	N2	50	115
nr5	p6	7	n2182	N2	50	105
nr5	p6	8	n2182	N2	45	120
nr5	p6	9	n2182	N2	65	140
nr5	p6	10	n2182	N2	70	185
nr5	p7	1	n156	N6	60	125
nr5	p7	2	n156	N6	49	120
nr5	p7	3	n156	N6	69	175
nr5	p7	4	n156	N6	64	120
nr5	p7	5	n156	N6	55	125
nr5	p7	6	n156	N6	48	85
nr5	p7	7	n156	N6	37	70
nr5	p7	8	n156	N6	52	145
nr5	p7	9	n156	N6	22	70
nr5	p7	10	n156	N6	53	150
nr5	p8	1	n2169	N1	57	165
nr5	p8	2	n2169	N1	72	190
nr5	p8	3	n2169	N1	73	190
nr5	p8	4	n2169	N1	74	200
nr5	p8	5	n2169	N1	89	190
nr5	p8	6	n2169	N1	100	210
nr5	p8	7	n2169	N1	89	190
nr5	p8	8	n2169	N1	89	180
nr5	p8	9	n2169	N1	79	165
nr5	p8	10	n2169	N1	41	125
nr5	p9	1	n195	N5	74	170
nr5	p9	2	n195	N5	52	130
nr5	p9	3	n195	N5	49	135
nr5	p9	4	n195	N5	58	160
nr5	p9	5	n195	N5	86	175
nr5	p9	6	n195	N5	77	145
nr5	p9	7	n195	N5	79	150
nr5	p9	8	n195	N5	60	130
nr5	p9	9	n195	N5	50	130
nr5	p9	10	n195	N5	64	140
nr6	p1	1	n2197	N3	20	60

vr5	p5	6	n143	N6	90	130
vr5	p5	7	v129	V10	39	115
vr5	p5	8	n143	N6	64	150
vr5	p5	9	v129	V10	61	140
vr5	p5	10	v129	V10	70	125
vr5	p6	1	v4	V8	40	105
vr5	p6	2	n143	N6	80	150
vr5	p6	3	v4	V8	49	110
vr5	p6	4	v4	V8	64	120
vr5	p6	5	v4	V8	40	90
vr5	p6	6	v4	V8	5	30
vr5	p6	7	v4	V8	52	135
vr5	p6	8	v4	V8	63	120
vr5	p6	9	v4	V8	55	125
vr5	p6	10	v4	V8	60	95
vr5	p7	1	v4	V8	49	100
vr5	p7	2	v4	V8	44	90
vr5	p7	3	v4	V8	60	130
vr5	p7	4	v4	V8	62	115
vr5	p7	5	v4	V8	41	100
vr5	p7	6	v4	V8	50	130
vr5	p7	7	v4	V8	59	130
vr5	p7	8	v95	V10	62	125
vr5	p7	9	n2166	N1	58	120
vr5	p7	10	v4	V8	45	80
vr5	p8	1	v17433	V11	22	-
vr5	p8	2	v17433	V11	38	105
vr5	p8	3	v17433	V11	30	110
vr5	p8	4	v17433	V11	72	130
vr5	p8	5	v17433	V11	50	140
vr5	p8	6	v17433	V11	77	140
vr5	p8	7	v17433	V11	48	115
vr5	p8	8	v17433	V11	93	160
vr5	p8	9	v17433	V11	62	140
vr5	p8	10	v17433	V11	51	120
vr5	p9	1	v122	V10	54	120
vr5	p9	2	v122	V10	47	125
vr5	p9	3	v122	V10	58	120
vr5	p9	4	v122	V10	16	35
vr5	p9	5	v122	V10	50	45
vr5	p9	6	v122	V10	70	145
vr5	p9	7	v122	V10	72	110
vr5	p9	8	v122	V10	32	105
vr5	p9	9	v122	V10	70	40
vr5	p9	10	v122	V10	49	120
vr6	p1	1	v43	V9	71	130

nr6	p1	2	n2197	N3	40	50
nr6	p1	3	n2197	N3	31	60
nr6	p1	4	n2197	N3	-	-
nr6	p1	5	n2197	N3	22	30
nr6	p1	6	n2197	N3	22	55
nr6	p1	7	n2197	N3	21	-
nr6	p1	8	n2197	N3	55	110
nr6	p1	9	n2197	N3	50	125
nr6	p1	10	n2197	N3	58	110
nr6	p2	1	n313	N7	53	90
nr6	p2	2	n313	N7	100	220
nr6	p2	3	n313	N7	88	260
nr6	p2	4	n313	N7	100	230
nr6	p2	5	n313	N7	73	190
nr6	p2	6	n313	N7	77	105
nr6	p2	7	n313	N7	64	120
nr6	p2	8	n313	N7	75	150
nr6	p2	9	n313	N7	70	170
nr6	p2	10	n313	N7	70	180
nr6	p3	1	n184	N5	53	165
nr6	p3	2	n184	N5	-	-
nr6	p3	3	n184	N5	52	120
nr6	p3	4	n184	N5	59	155
nr6	p3	5	n184	N5	70	130
nr6	p3	6	n184	N5	50	105
nr6	p3	7	n184	N5	29	85
nr6	p3	8	n184	N5	74	165
nr6	p3	9	n184	N5	40	80
nr6	p3	10	n184	N5	63	95
nr6	p4	1	n195	N5	49	105
nr6	p4	2	n195	N5	40	110
nr6	p4	3	n195	N5	41	110
nr6	p4	4	n195	N5	36	60
nr6	p4	5	n195	N5	39	80
nr6	p4	6	n195	N5	-	-
nr6	p4	7	n195	N5	45	120
nr6	p4	8	n195	N5	57	100
nr6	p4	9	n195	N5	40	145
nr6	p4	10	n195	N5	-	-
nr6	p5	1	n306	N7	38	90
nr6	p5	2	n306	N7	58	110
nr6	p5	3	n306	N7	-	-
nr6	p5	4	n306	N7	48	90
nr6	p5	5	n306	N7	72	145
nr6	p5	6	n306	N7	58	80
nr6	p5	7	n306	N7	50	105

vr6	p1	2	v43	V9	66	155
vr6	p1	3	v43	V9	5	15
vr6	p1	4	v43	V9	-	-
vr6	p1	5	v62	V9	62	165
vr6	p1	6	v62	V9	52	105
vr6	p1	7	v62	V9	49	155
vr6	p1	8	v62	V9	50	90
vr6	p1	9	v62	V9	58	125
vr6	p1	10	v43	V9	54	110
vr6	p2	1	v127	V10	70	175
vr6	p2	2	v127	V10	59	125
vr6	p2	3	v127	V10	68	100
vr6	p2	4	v127	V10	62	130
vr6	p2	5	n143	N6	44	115
vr6	p2	6	v127	V10	60	140
vr6	p2	7	v127	V10	39	90
vr6	p2	8	v127	V10	42	80
vr6	p2	9	v127	V10	41	75
vr6	p2	10	v127	V10	32	60
vr6	p3	1	v40	V8	61	130
vr6	p3	2	n143	N6	67	140
vr6	p3	3	n143	N6	65	140
vr6	p3	4	v40	V8	62	160
vr6	p3	5	v40	V8	59	120
vr6	p3	6	v40	V8	80	170
vr6	p3	7	n143	N6	60	150
vr6	p3	8	v40	V8	70	130
vr6	p3	9	v40	V8	56	145
vr6	p3	10	n143	N6	46	90
vr6	p4	1	v17433	V11	55	135
vr6	p4	2	v17433	V11	60	120
vr6	p4	3	v17433	V11	51	145
vr6	p4	4	v17433	V11	74	130
vr6	p4	5	v17433	V11	40	130
vr6	p4	6	v17433	V11	57	120
vr6	p4	7	v17433	V11	65	155
vr6	p4	8	v17433	V11	75	145
vr6	p4	9	v17433	V11	79	160
vr6	p4	10	v17433	V11	50	100
vr6	p5	1	v122	V10	72	140
vr6	p5	2	v122	V10	32	90
vr6	p5	3	v122	V10	49	140
vr6	p5	4	v122	V10	81	160
vr6	p5	5	n143	N6	66	145
vr6	p5	6	n143	N6	67	180
vr6	p5	7	v122	V10	61	140

nr6	p5	8	n306	N7	60	125
nr6	p5	9	n306	N7	41	-
nr6	p5	10	n306	N7	53	100
nr6	p6	1	n2197	N3	60	140
nr6	p6	2	n2197	N3	51	110
nr6	p6	3	n2197	N3	52	120
nr6	p6	4	n2197	N3	39	85
nr6	p6	5	n2197	N3	32	80
nr6	p6	6	n2197	N3	57	120
nr6	p6	7	n2197	N3	49	75
nr6	p6	8	n2197	N3	68	130
nr6	p6	9	n2197	N3	65	160
nr6	p6	10	n2197	N3	63	120
nr6	p7	1	n149	N6	71	125
nr6	p7	2	n149	N6	79	170
nr6	p7	3	n149	N6	59	180
nr6	p7	4	n149	N6	62	175
nr6	p7	5	n149	N6	56	170
nr6	p7	6	n149	N6	26	25
nr6	p7	7	n149	N6	55	155
nr6	p7	8	n149	N6	60	155
nr6	p7	9	n149	N6	52	180
nr6	p7	10	n149	N6	96	210
nr6	p8	1	n2166	N1	70	145
nr6	p8	2	n2169	N1	110	205
nr6	p8	3	n2166	N1	71	170
nr6	p8	4	n2169	N1	88	160
nr6	p8	5	n2166	N1	70	140
nr6	p8	6	n2166	N1	5	20
nr6	p8	7	n2166	N1	90	195
nr6	p8	8	n2166	N1	59	160
nr6	p8	9	n2166	N1	80	165
nr6	p8	10	n2166	N1	75	180
nr6	p9	1	n182	N5	79	155
nr6	p9	2	n182	N5	98	210
nr6	p9	3	n182	N5	59	135
nr6	p9	4	n182	N5	64	140
nr6	p9	5	n182	N5	81	155
nr6	p9	6	n182	N5	66	95
nr6	p9	7	n182	N5	80	175
nr6	p9	8	n182	N5	94	155
nr6	p9	9	n182	N5	70	180
nr6	p9	10	n182	N5	71	180
nr7	p1	1	n2199	N3	56	85
nr7	p1	2	n2199	N3	46	70
nr7	p1	3	n2199	N3	60	90

vr6	p5	8	v122	V10	77	15
vr6	p5	9	v122	V10	52	90
vr6	p5	10	n143	N6	70	115
vr6	p6	1	n143	N6	59	120
vr6	p6	2	v22	V8	62	125
vr6	p6	3	v22	V8	41	100
vr6	p6	4	v22	V8	58	125
vr6	p6	5	v22	V8	32	60
vr6	p6	6	v22	V8	49	95
vr6	p6	7	v22	V8	40	90
vr6	p6	8	v22	V8	77	150
vr6	p6	9	v22	V8	-	-
vr6	p6	10	v22	V8	34	-
vr6	p7	1	v40	V8	58	135
vr6	p7	2	v40	V8	56	110
vr6	p7	3	v40	V8	32	130
vr6	p7	4	v40	V8	90	145
vr6	p7	5	v40	V8	43	110
vr6	p7	6	v40	V8	66	150
vr6	p7	7	v40	V8	40	115
vr6	p7	8	v40	V8	56	100
vr6	p7	9	v40	V8	49	125
vr6	p7	10	v40	V8	63	165
vr6	p8	1	73/173	V9/N5	71	155
vr6	p8	2	73/173	V9/N5	70	145
vr6	p8	3	73/173	V9/N5	30	80
vr6	p8	4	73/173	V9/N5	-	-
vr6	p8	5	73/173	V9/N5	55	145
vr6	p8	6	73/173	V9/N5	60	150
vr6	p8	7	73/173	V9/N5	70	135
vr6	p8	8	73/173	V9/N5	43	105
vr6	p8	9	73/173	V9/N5	73	160
vr6	p8	10	v67	V9	62	125
vr6	p9	1	v129	V10	57	85
vr6	p9	2	v129	V10	49	90
vr6	p9	3	v129	V10	71	100
vr6	p9	4	v149	N6	50	80
vr6	p9	5	v129	V10	40	90
vr6	p9	6	v129	V10	60	140
vr6	p9	7	v129	V10	-	-
vr6	p9	8	v129	V10	44	110
vr6	p9	9	v129	V10	-	-
vr6	p9	10	v129	V10	42	95
vr7	p1	1	v17433	V11	20	-
vr7	p1	2	v17433	V11	44	150
vr7	p1	3	v17433	V11	28	50

nr7	p1	4	n2199	N3	41	75
nr7	p1	5	n2199	N3	52	85
nr7	p1	6	n2199	N3	50	80
nr7	p1	7	n2199	N3	38	45
nr7	p1	8	n2199	N3	41	90
nr7	p1	9	n2199	N3	5	30
nr7	p1	10	n2199	N3	49	110
nr7	p2	1	n306	N7	-	-
nr7	p2	2	n306	N7	55	90
nr7	p2	3	n306	N7	53	95
nr7	p2	4	n306	N7	40	60
nr7	p2	5	n306	N7	40	110
nr7	p2	6	n306	N7	51	95
nr7	p2	7	n306	N7	62	115
nr7	p2	8	n306	N7	48	95
nr7	p2	9	n306	N7	101	170
nr7	p2	10	n306	N7	80	115
nr7	p3	1	n179	N5	90	185
nr7	p3	2	n179	N5	60	115
nr7	p3	3	n179	N5	49	100
nr7	p3	4	n179	N5	61	150
nr7	p3	5	n179	N5	33	75
nr7	p3	6	n179	N5	59	150
nr7	p3	7	n179	N5	62	180
nr7	p3	8	n179	N5	50	160
nr7	p3	9	n179	N5	60	150
nr7	p3	10	n179	N5	60	140
nr7	p4	1	n174	N5	67	155
nr7	p4	2	n174	N5	58	110
nr7	p4	3	n174	N5	55	110
nr7	p4	4	n174	N5	76	170
nr7	p4	5	n174	N5	37	95
nr7	p4	6	n174	N5	40	80
nr7	p4	7	n174	N5	49	105
nr7	p4	8	n174	N5	41	95
nr7	p4	9	n174	N5	29	80
nr7	p4	10	n174	N5	47	140
nr7	p5	1	n313	N7	55	160
nr7	p5	2	n313	N7	67	180
nr7	p5	3	n313	N7	88	205
nr7	p5	4	n313	N7	70	215
nr7	p5	5	n313	N7	73	195
nr7	p5	6	n313	N7	76	215
nr7	p5	7	n313	N7	70	200
nr7	p5	8	n313	N7	76	180
nr7	p5	9	n313	N7	60	160

vr7	p1	4	v17433	V11	69	190
vr7	p1	5	v17433	V11	81	200
vr7	p1	6	v17433	V11	34	90
vr7	p1	7	v17433	V11	60	150
vr7	p1	8	v17433	V11	50	140
vr7	p1	9	v17433	V11	63	145
vr7	p1	10	v17433	V11	40	100
vr7	p2	1	v102	V10	38	105
vr7	p2	2	v102	V10	49	130
vr7	p2	3	v102	V10	50	135
vr7	p2	4	v102	V10	49	125
vr7	p2	5	v102	V10	48	75
vr7	p2	6	v102	V10	49	105
vr7	p2	7	n179	N5	10	40
vr7	p2	8	v102	V10	39	100
vr7	p2	9	v102	V10	50	130
vr7	p2	10	v102	V10	44	120
vr7	p3	1	v19	V8	80	180
vr7	p3	2	v19	V8	72	195
vr7	p3	3	v15	V8	62	140
vr7	p3	4	v15	V8	65	120
vr7	p3	5	v15	V8	75	155
vr7	p3	6	v15	V8	28	50
vr7	p3	7	v15	V8	32	55
vr7	p3	8	v15	V8	-	-
vr7	p3	9	v15	V8	72	130
vr7	p3	10	v15	V8	61	160
vr7	p4	1	n97	N6	68	160
vr7	p4	2	n97	N6	56	150
vr7	p4	3	n179	N5	70	175
vr7	p4	4	n97	N6	70	145
vr7	p4	5	n97	N6	-	-
vr7	p4	6	n97	N6	79	160
vr7	p4	7	n97	N6	58	100
vr7	p4	8	n97	N6	49	90
vr7	p4	9	n97	N6	68	120
vr7	p4	10	n97	N6	61	105
vr7	p5	1	v96	V10	55	150
vr7	p5	2	n179	N5	48	110
vr7	p5	3	v96	V10	53	110
vr7	p5	4	n179	N5	69	140
vr7	p5	5	v96	V10	53	120
vr7	p5	6	v96	V10	28	120
vr7	p5	7	v96	V10	57	145
vr7	p5	8	v96	V10	36	45
vr7	p5	9	v96	V10	60	150

nr7	p5	10	n313	N7	71	175
nr7	p6	1	n2199	N3	62	140
nr7	p6	2	n2199	N3	58	100
nr7	p6	3	n2199	N3	84	180
nr7	p6	4	n2199	N3	59	105
nr7	p6	5	n2199	N3	70	155
nr7	p6	6	n2199	N3	56	115
nr7	p6	7	n2199	N3	49	130
nr7	p6	8	n2197	N3	7	45
nr7	p6	9	n2199	N3	70	175
nr7	p6	10	n2197	N3	78	220
nr7	p7	1	n147	N6	42	95
nr7	p7	2	n147	N6	61	100
nr7	p7	3	n147	N6	56	120
nr7	p7	4	n147	N6	60	155
nr7	p7	5	n147	N6	72	185
nr7	p7	6	n147	N6	70	175
nr7	p7	7	n147	N6	82	155
nr7	p7	8	n147	N6	55	165
nr7	p7	9	n147	N6	42	100
nr7	p7	10	n147	N6	52	140
nr7	p8	1	n2175	N1	50	125
nr7	p8	2	n2175	N1	58	145
nr7	p8	3	n2175	N1	47	120
nr7	p8	4	n2175	N1	69	155
nr7	p8	5	n2175	N1	82	175
nr7	p8	6	n2175	N1	82	200
nr7	p8	7	n2175	N1	76	170
nr7	p8	8	n2175	N1	59	140
nr7	p8	9	n2175	N1	80	165
nr7	p8	10	n147	N6	55	150
nr7	p9	1	n179	N5	68	145
nr7	p9	2	n184	N5	53	165
nr7	p9	3	n184	N5	72	155
nr7	p9	4	n184	N5	62	165
nr7	p9	5	n184	N5	38	70
nr7	p9	6	n184	N5	52	145
nr7	p9	7	n184	N5	58	120
nr7	p9	8	n184	N5	46	110
nr7	p9	9	n184	N5	53	130
nr7	p9	10	n184	N5	2	-
nr8	p1	1	n2189	N3	42	90
nr8	p1	2	n2189	N3	39	95
nr8	p1	3	n2189	N3	43	65
nr8	p1	4	n2189	N3	18	20
nr8	p1	5	n2189	N3	32	70

vr7	p5	10	n179	N5	40	110
vr7	p6	1	n179	N5	51	130
vr7	p6	2	v23	V8	53	115
vr7	p6	3	v23	V8	54	110
vr7	p6	4	n179	N5	50	70
vr7	p6	5	v23	V8	41	25
vr7	p6	6	v23	V8	48	75
vr7	p6	7	v23	V8	44	90
vr7	p6	8	v23	V8	59	110
vr7	p6	9	v23	V8	51	70
vr7	p6	10	v23	V8	72	170
vr7	p7	1	n179	N5	58	130
vr7	p7	2	v19	V8	5	10
vr7	p7	3	v19	V8	43	95
vr7	p7	4	v19	V8	44	95
vr7	p7	5	v19	V8	58	135
vr7	p7	6	n179	N5	62	90
vr7	p7	7	n179	N5	60	100
vr7	p7	8	v19	V8	21	40
vr7	p7	9	v19	V8	69	130
vr7	p7	10	v19	V8	39	130
vr7	p8	1	73/173	V9/N5	47	110
vr7	p8	2	73/173	V9/N5	22	30
vr7	p8	3	73/173	V9/N5	82	175
vr7	p8	4	73/173	V9/N5	62	145
vr7	p8	5	73/173	V9/N5	74	65
vr7	p8	6	73/173	V9/N5	61	150
vr7	p8	7	73/173	V9/N5	33	70
vr7	p8	8	73/173	V9/N5	71	150
vr7	p8	9	73/173	V9/N5	58	165
vr7	p8	10	73/173	V9/N5	-	-
vr7	p9	1	73/173	V9/N5	59	155
vr7	p9	2	73/173	V9/N5	66	60
vr7	p9	3	73/173	V9/N5	75	195
vr7	p9	4	73/173	V9/N5	87	200
vr7	p9	5	73/173	V9/N5	84	190
vr7	p9	6	73/173	V9/N5	60	130
vr7	p9	7	73/173	V9/N5	53	135
vr7	p9	8	73/173	V9/N5	76	165
vr7	p9	9	73/173	V9/N5	53	180
vr7	p9	10	73/173	V9/N5	84	165
vr8	p1	1	n2175	N1	60	170
vr8	p1	2	n179	N5	49	110
vr8	p1	3	n2175	N1	80	180
vr8	p1	4	n2175	N1	64	130
vr8	p1	5	n2175	N1	72	180

nr8	p1	6	n2189	N3	-	-
nr8	p1	7	n2189	N3	28	55
nr8	p1	8	n2189	N3	43	75
nr8	p1	9	n2189	N3	41	85
nr8	p1	10	n2189	N3	45	45
nr8	p2	1	n235	N7	50	110
nr8	p2	2	n235	N7	70	140
nr8	p2	3	n235	N7	71	165
nr8	p2	4	n235	N7	62	130
nr8	p2	5	n235	N7	49	135
nr8	p2	6	n235	N7	60	155
nr8	p2	7	n235	N7	70	165
nr8	p2	8	n235	N7	53	130
nr8	p2	9	n235	N7	79	150
nr8	p2	10	n235	N7	72	100
nr8	p3	1	n184	N5	80	165
nr8	p3	2	n184	N5	61	130
nr8	p3	3	n184	N5	50	105
nr8	p3	4	n184	N5	52	110
nr8	p3	5	n184	N5	39	100
nr8	p3	6	n184	N5	-	-
nr8	p3	7	n184	N5	40	90
nr8	p3	8	n184	N5	-	-
nr8	p3	9	n184	N5	56	135
nr8	p3	10	n184	N5	51	90
nr8	p4	1	n184	N5	60	90
nr8	p4	2	n184	N5	-	-
nr8	p4	3	n184	N5	34	75
nr8	p4	4	n184	N5	-	-
nr8	p4	5	n184	N5	-	10
nr8	p4	6	n184	N5	50	110
nr8	p4	7	n184	N5	-	-
nr8	p4	8	n184	N5	-	-
nr8	p4	9	n184	N5	56	130
nr8	p4	10	n184	N5	50	110
nr8	p5	1	n304	N7	38	95
nr8	p5	2	n179	N5	62	125
nr8	p5	3	n304	N7	55	60
nr8	p5	4	n304	N7	-	-
nr8	p5	5	n304	N7	37	115
nr8	p5	6	n304	N7	56	145
nr8	p5	7	n304	N7	66	140
nr8	p5	8	n304	N7	64	170
nr8	p5	9	n304	N7	65	150
nr8	p5	10	n304	N7	55	130
nr8	p6	1	n2189	N3	70	160

vr8	p1	6	n179	N5	63	145
vr8	p1	7	n2175	N1	72	150
vr8	p1	8	n2175	N1	66	180
vr8	p1	9	n2175	N1	75	165
vr8	p1	10	n2175	N1	73	150
vr8	p2	1	v96	V10	70	180
vr8	p2	2	v96	V10	63	140
vr8	p2	3	v96	V10	32	60
vr8	p2	4	v96	V10	48	110
vr8	p2	5	v96	V10	51	175
vr8	p2	6	v96	V10	68	115
vr8	p2	7	v96	V10	32	115
vr8	p2	8	v96	V10	72	175
vr8	p2	9	v96	V10	33	65
vr8	p2	10	v96	V10	34	120
vr8	p3	1	v4	V8	30	-
vr8	p3	2	v4	V8	45	105
vr8	p3	3	v4	V8	70	165
vr8	p3	4	v4	V8	60	140
vr8	p3	5	n179	N5	38	115
vr8	p3	6	n179	N5	72	170
vr8	p3	7	v4	V8	37	100
vr8	p3	8	v4	V8	62	140
vr8	p3	9	v4	V8	46	130
vr8	p3	10	v4	V8	44	120
vr8	p4	1	v102	V10	63	150
vr8	p4	2	v102	V10	49	130
vr8	p4	3	v102	V10	50	140
vr8	p4	4	v102	V10	57	145
vr8	p4	5	v102	V10	39	115
vr8	p4	6	v102	V10	51	140
vr8	p4	7	n179	N5	41	105
vr8	p4	8	n179	N5	53	140
vr8	p4	9	v102	V10	50	135
vr8	p4	10	v102	V10	40	75
vr8	p5	1	v95	V10	65	170
vr8	p5	2	v95	V10	52	160
vr8	p5	3	n179	N5	40	145
vr8	p5	4	v95	V10	60	160
vr8	p5	5	v95	V10	59	155
vr8	p5	6	v95	V10	42	110
vr8	p5	7	v95	V10	33	125
vr8	p5	8	v95	V10	50	100
vr8	p5	9	v95	V10	41	95
vr8	p5	10	v95	V10	43	70
vr8	p6	1	v39	V8	70	165

nr8	p6	2	n2189	N3	51	105
nr8	p6	3	n2189	N3	60	140
nr8	p6	4	n2189	N3	50	90
nr8	p6	5	n2189	N3	45	100
nr8	p6	6	n2189	N3	32	85
nr8	p6	7	n2189	N3	47	90
nr8	p6	8	n2189	N3	21	70
nr8	p6	9	n2189	N3	48	105
nr8	p6	10	n2189	N3	-	-
nr8	p7	1	n97	N6	30	65
nr8	p7	2	n97	N6	8	55
nr8	p7	3	n97	N6	40	105
nr8	p7	4	n97	N6	52	140
nr8	p7	5	n97	N6	-	-
nr8	p7	6	n97	N6	61	160
nr8	p7	7	n97	N6	80	180
nr8	p7	8	n97	N6	92	190
nr8	p7	9	n97	N6	70	130
nr8	p7	10	n97	N6	30	115
nr8	p8	1	n2182	N2	60	90
nr8	p8	2	n2182	N2	66	190
nr8	p8	3	n2182	N2	80	200
nr8	p8	4	n2182	N2	69	190
nr8	p8	5	n2182	N2	70	170
nr8	p8	6	n2182	N2	91	210
nr8	p8	7	n2182	N2	70	160
nr8	p8	8	n2182	N2	81	190
nr8	p8	9	n2182	N2	74	210
nr8	p8	10	n2182	N2	36	160
nr8	p9	1	n182	N5	85	200
nr8	p9	2	n182	N5	72	165
nr8	p9	3	n182	N5	95	220
nr8	p9	4	n182	N5	58	150
nr8	p9	5	n182	N5	82	160
nr8	p9	6	n182	N5	21	35
nr8	p9	7	n182	N5	70	185
nr8	p9	8	n182	N5	55	150
nr8	p9	9	n182	N5	68	185
nr8	p9	10	n182	N5	-	-
nr9	p1	1	n2182	N2	38	50
nr9	p1	2	n2182	N2	32	50
nr9	p1	3	n2182	N2	39	80
nr9	p1	4	n2189	N3	49	70
nr9	p1	5	n2182	N2	28	60
nr9	p1	6	n2182	N2	29	55
nr9	p1	7	n2182	N2	39	95

vr8	p6	2	v39	V8	60	115
vr8	p6	3	v39	V8	38	90
vr8	p6	4	v39	V8	60	115
vr8	p6	5	v39	V8	74	125
vr8	p6	6	n179	N5	75	130
vr8	p6	7	v39	V8	70	145
vr8	p6	8	v39	V8	54	100
vr8	p6	9	n179	N5	62	115
vr8	p6	10	v39	V8	68	115
vr8	p7	1	v23	V8	33	90
vr8	p7	2	v23	V8	60	85
vr8	p7	3	v23	V8	41	100
vr8	p7	4	v23	V8	61	110
vr8	p7	5	n179	N5	42	100
vr8	p7	6	v23	V8	55	105
vr8	p7	7	v23	V8	38	105
vr8	p7	8	v23	V8	52	95
vr8	p7	9	v23	V8	60	140
vr8	p7	10	v23	V8	67	155
vr8	p8	1	73/173	V9/N5	14	80
vr8	p8	2	n179	N5	65	130
vr8	p8	3	73/173	V9/N5	-	-
vr8	p8	4	73/173	V9/N5	69	160
vr8	p8	5	n2175	N1	30	-
vr8	p8	6	73/173	V9/N5	70	160
vr8	p8	7	n179	N5	71	160
vr8	p8	8	73/173	V9/N5	75	190
vr8	p8	9	73/173	V9/N5	98	200
vr8	p8	10	73/173	V9/N5	24	-
vr8	p9	1	73/173	V9/N5	84	195
vr8	p9	2	73/173	V9/N5	79	180
vr8	p9	3	n179	N5	98	140
vr8	p9	4	73/173	V9/N5	74	185
vr8	p9	5	73/173	V9/N5	91	205
vr8	p9	6	n179	N5	70	135
vr8	p9	7	73/173	V9/N5	68	165
vr8	p9	8	73/173	V9/N5	64	195
vr8	p9	9	73/173	V9/N5	82	230
vr8	p9	10	n179	N5	91	160
vr9	p1	1	n2175	N1	80	160
vr9	p1	2	n2175	N1	71	145
vr9	p1	3	n2175	N1	79	175
vr9	p1	4	n2175	N1	71	160
vr9	p1	5	n2175	N1	70	165
vr9	p1	6	n2175	N1	72	150
vr9	p1	7	n2175	N1	68	140

nr9	p1	8	n2182	N2	23	65
nr9	p1	9	n2182	N2	46	115
nr9	p1	10	n2182	N2	41	85
nr9	p2	1	n304	N7	40	105
nr9	p2	2	n304	N7	51	95
nr9	p2	3	n304	N7	41	100
nr9	p2	4	n304	N7	33	95
nr9	p2	5	n304	N7	55	125
nr9	p2	6	n304	N7	56	135
nr9	p2	7	n304	N7	59	125
nr9	p2	8	n304	N7	58	130
nr9	p2	9	n304	N7	64	155
nr9	p2	10	n304	N7	58	175
nr9	p3	1	n235	N7	40	160
nr9	p3	2	n235	N7	59	170
nr9	p3	3	n235	N7	52	140
nr9	p3	4	n235	N7	54	155
nr9	p3	5	n235	N7	59	125
nr9	p3	6	n235	N7	60	140
nr9	p3	7	n235	N7	51	110
nr9	p3	8	n235	N7	68	115
nr9	p3	9	n235	N7	64	125
nr9	p3	10	n235	N7	-	-
nr9	p4	1	n195	N5	40	65
nr9	p4	2	n195	N5	48	95
nr9	p4	3	n195	N5	42	85
nr9	p4	4	n195	N5	50	80
nr9	p4	5	n195	N5	41	60
nr9	p4	6	n195	N5	51	100
nr9	p4	7	n195	N5	50	115
nr9	p4	8	n195	N5	53	135
nr9	p4	9	n196	N5	-	-
nr9	p4	10	n196	N5	48	120
nr9	p5	1	n235	N7	55	130
nr9	p5	2	n235	N7	54	135
nr9	p5	3	n235	N7	46	150
nr9	p5	4	n235	N7	60	155
nr9	p5	5	n235	N7	-	-
nr9	p5	6	n235	N7	72	160
nr9	p5	7	n235	N7	52	135
nr9	p5	8	n235	N7	50	125
nr9	p5	9	n235	N7	45	140
nr9	p5	10	n235	N7	42	60
nr9	p6	1	n2200	N4	50	110
nr9	p6	2	n2200	N4	40	80
nr9	p6	3	n2200	N4	60	120

vr9	p1	8	n2175	N1	53	125
vr9	p1	9	n2175	N1	68	160
vr9	p1	10	n2175	N1	68	155
vr9	p2	1	v102	V10	50	135
vr9	p2	2	v102	V10	41	80
vr9	p2	3	v102	V10	42	120
vr9	p2	4	v102	V10	40	90
vr9	p2	5	v102	V10	50	135
vr9	p2	6	v102	V10	70	125
vr9	p2	7	v102	V10	43	145
vr9	p2	8	v102	V10	45	85
vr9	p2	9	v102	V10	41	75
vr9	p2	10	v102	V10	40	110
vr9	p3	1	v19	V8	43	135
vr9	p3	2	v19	V8	4	-
vr9	p3	3	v19	V8	70	170
vr9	p3	4	v19	V8	39	145
vr9	p3	5	v19	V8	60	145
vr9	p3	6	v19	V8	49	130
vr9	p3	7	v19	V8	80	135
vr9	p3	8	v19	V8	50	95
vr9	p3	9	v19	V8	-	-
vr9	p3	10	v19	V8	40	135
vr9	p4	1	v129	V10	51	135
vr9	p4	2	v129	V10	41	165
vr9	p4	3	v129	V10	50	150
vr9	p4	4	v129	V10	61	170
vr9	p4	5	v129	V10	60	160
vr9	p4	6	v129	V10	42	125
vr9	p4	7	v129	V10	84	170
vr9	p4	8	v129	V10	42	125
vr9	p4	9	n179	N5	64	110
vr9	p4	10	n179	N5	72	115
vr9	p5	1	v129	V10	61	110
vr9	p5	2	v129	V10	70	105
vr9	p5	3	v129	V10	8	10
vr9	p5	4	v129	V10	50	135
vr9	p5	5	v129	V10	14	70
vr9	p5	6	v129	V10	70	150
vr9	p5	7	v129	V10	30	110
vr9	p5	8	v129	V10	38	105
vr9	p5	9	v129	V10	-	-
vr9	p5	10	v129	V10	45	140
vr9	p6	1	v40	V8	60	175
vr9	p6	2	v40	V8	14	50
vr9	p6	3	v40	V8	58	135

nr9	p6	4	n2200	N4	51	120
nr9	p6	5	n2200	N4	39	80
nr9	p6	6	n2200	N4	70	70
nr9	p6	7	n2200	N4	41	125
nr9	p6	8	n2200	N4	68	140
nr9	p6	9	n2200	N4	45	150
nr9	p6	10	n2200	N4	50	160
nr9	p7	1	n147	N6	39	120
nr9	p7	2	n147	N6	30	85
nr9	p7	3	n147	N6	67	185
nr9	p7	4	n147	N6	82	185
nr9	p7	5	n147	N6	77	185
nr9	p7	6	n147	N6	69	150
nr9	p7	7	n147	N6	68	125
nr9	p7	8	n147	N6	60	155
nr9	p7	9	n147	N6	62	140
nr9	p7	10	n147	N6	47	130
nr9	p8	1	n2200	N4	50	50
nr9	p8	2	n2200	N4	69	170
nr9	p8	3	n2200	N4	70	185
nr9	p8	4	n2200	N4	64	145
nr9	p8	5	n2200	N4	70	195
nr9	p8	6	n2200	N4	51	145
nr9	p8	7	n2200	N4	75	180
nr9	p8	8	n2200	N4	80	125
nr9	p8	9	n2200	N4	100	215
nr9	p8	10	n2200	N4	84	215
nr9	p9	1	n195	N5	60	195
nr9	p9	2	n195	N5	77	155
nr9	p9	3	n195	N5	39	125
nr9	p9	4	n195	N5	35	50
nr9	p9	5	n195	N5	63	110
nr9	p9	6	n195	N5	61	130
nr9	p9	7	n195	N5	41	75
nr9	p9	8	n195	N5	74	150
nr9	p9	9	n195	N5	40	150
nr9	p9	10	n195	N5	58	120
nr10	p1	1	n2200	N4	46	55
nr10	p1	2	n2200	N4	46	55
nr10	p1	3	n2200	N4	8	15
nr10	p1	4	n2200	N4	55	70
nr10	p1	5	n2200	N4	32	60
nr10	p1	6	n2200	N4	50	70
nr10	p1	7	n2200	N4	58	100
nr10	p1	8	n2200	N4	70	110
nr10	p1	9	n2200	N4	29	80

vr9	p6	4	v40	V8	55	130
vr9	p6	5	v40	V8	57	140
vr9	p6	6	v40	V8	72	140
vr9	p6	7	v40	V8	51	70
vr9	p6	8	v40	V8	66	140
vr9	p6	9	v40	V8	80	125
vr9	p6	10	v40	V8	65	170
vr9	p7	1	v39	V8	72	135
vr9	p7	2	v39	V8	8	50
vr9	p7	3	v39	V8	50	80
vr9	p7	4	v39	V8	40	-
vr9	p7	5	v39	V8	44	100
vr9	p7	6	v39	V8	52	115
vr9	p7	7	v39	V8	50	120
vr9	p7	8	v39	V8	16	90
vr9	p7	9	v39	V8	57	140
vr9	p7	10	v39	V8	39	130
vr9	p8	1	73/173	V9/N5	44	135
vr9	p8	2	73/173	V9/N5	46	90
vr9	p8	3	73/173	V9/N5	54	120
vr9	p8	4	73/173	V9/N5	45	130
vr9	p8	5	73/173	V9/N5	51	125
vr9	p8	6	73/173	V9/N5	62	140
vr9	p8	7	73/173	V9/N5	88	150
vr9	p8	8	73/173	V9/N5	61	130
vr9	p8	9	73/173	V9/N5	80	175
vr9	p8	10	73/173	V9/N5	58	135
vr9	p9	1	73/173	V9/N5	79	130
vr9	p9	2	73/173	V9/N5	50	100
vr9	p9	3	73/173	V9/N5	10	40
vr9	p9	4	n147	N6	43	120
vr9	p9	5	n147	N6	60	115
vr9	p9	6	n147	N6	21	85
vr9	p9	7	n147	N6	32	80
vr9	p9	8	n147	N6	33	110
vr9	p9	9	n147	N6	54	105
vr9	p9	10	n147	N6	8	70
vr10	p1	1	n2175	N1	66	135
vr10	p1	2	n2175	N1	46	140
vr10	p1	3	n2175	N1	53	145
vr10	p1	4	n2175	N1	45	140
vr10	p1	5	n2175	N1	10	40
vr10	p1	6	n2175	N1	-	-
vr10	p1	7	n2175	N1	63	140
vr10	p1	8	n2175	N1	55	120
vr10	p1	9	n2175	N1	68	120

nr10	p1	10	n2200	N4	46	110
nr10	p2	1	n319	N7	60	105
nr10	p2	2	n319	N7	52	100
nr10	p2	3	n319	N7	44	90
nr10	p2	4	n319	N7	77	130
nr10	p2	5	n319	N7	42	85
nr10	p2	6	n319	N7	80	165
nr10	p2	7	n319	N7	61	180
nr10	p2	8	n319	N7	64	75
nr10	p2	9	n319	N7	41	140
nr10	p2	10	n319	N7	53	140
nr10	p3	1	n319	N7	62	125
nr10	p3	2	n319	N7	50	125
nr10	p3	3	n319	N7	21	100
nr10	p3	4	n319	N7	50	75
nr10	p3	5	n319	N7	45	105
nr10	p3	6	n319	N7	63	105
nr10	p3	7	n319	N7	45	90
nr10	p3	8	n319	N7	64	90
nr10	p3	9	n319	N7	50	105
nr10	p3	10	n319	N7	85	135
nr10	p4	1	n199	N5	55	95
nr10	p4	2	n199	N5	49	60
nr10	p4	3	n179	N5	64	110
nr10	p4	4	n199	N5	50	90
nr10	p4	5	n199	N5	50	90
nr10	p4	6	n199	N5	63	110
nr10	p4	7	n199	N5	63	135
nr10	p4	8	n179	N5	62	170
nr10	p4	9	n199	N5	43	115
nr10	p4	10	n199	N5	45	95
nr10	p5	1	n319	N7	80	175
nr10	p5	2	n319	N7	73	180
nr10	p5	3	n319	N7	72	165
nr10	p5	4	n319	N7	68	160
nr10	p5	5	n319	N7	79	150
nr10	p5	6	n319	N7	60	155
nr10	p5	7	n319	N7	33	110
nr10	p5	8	n319	N7	61	120
nr10	p5	9	n319	N7	43	95
nr10	p5	10	n319	N7	55	145
nr10	p6	1	n2174	N1	39	105
nr10	p6	2	n2174	N1	51	90
nr10	p6	3	n2174	N1	29	35
nr10	p6	4	n2174	N1	46	90
nr10	p6	5	n2174	N1	41	90

vr10	p1	10	n2175	N1	52	120
vr10	p2	1	v122	V10	36	20
vr10	p2	2	v122	V10	80	175
vr10	p2	3	n179	N5	88	150
vr10	p2	4	v122	V10	70	120
vr10	p2	5	v122	V10	54	60
vr10	p2	6	v122	V10	62	120
vr10	p2	7	v122	V10	5	5
vr10	p2	8	v122	V10	-	-
vr10	p2	9	v122	V10	65	110
vr10	p2	10	v122	V10	82	150
vr10	p3	1	v22	V8	23	90
vr10	p3	2	v22	V8	60	135
vr10	p3	3	v22	V8	-	-
vr10	p3	4	v22	V8	15	-
vr10	p3	5	v22	V8	40	85
vr10	p3	6	v22	V8	61	145
vr10	p3	7	v22	V8	33	120
vr10	p3	8	v22	V8	63	155
vr10	p3	9	v22	V8	55	130
vr10	p3	10	v22	V8	62	120
vr10	p4	1	v122	V10	-	-
vr10	p4	2	v122	V10	73	170
vr10	p4	3	v122	V10	59	145
vr10	p4	4	v122	V10	57	85
vr10	p4	5	v122	V10	16	10
vr10	p4	6	v122	V10	70	80
vr10	p4	7	v122	V10	66	170
vr10	p4	8	v122	V10	30	30
vr10	p4	9	v122	V10	68	165
vr10	p4	10	v122	V10	-	-
vr10	p5	1	v96	V10	71	155
vr10	p5	2	v96	V10	52	140
vr10	p5	3	v96	V10	60	150
vr10	p5	4	v96	V10	52	150
vr10	p5	5	v96	V10	61	155
vr10	p5	6	v96	V10	41	140
vr10	p5	7	v96	V10	58	110
vr10	p5	8	v96	V10	41	50
vr10	p5	9	v96	V10	61	130
vr10	p5	10	v96	V10	-	-
vr10	p6	1	v4	V8	26	70
vr10	p6	2	v4	V8	16	80
vr10	p6	3	v4	V8	52	120
vr10	p6	4	v4	V8	60	140
vr10	p6	5	v4	V8	56	100

nr10	p6	6	n2174	N1	42	95
nr10	p6	7	n2174	N1	33	70
nr10	p6	8	n2174	N1	55	125
nr10	p6	9	n2174	N1	52	110
nr10	p6	10	n2174	N1	51	115
nr10	p7	1	n149	N6	50	130
nr10	p7	2	n149	N6	71	170
nr10	p7	3	n149	N6	71	145
nr10	p7	4	n149	N6	51	40
nr10	p7	5	n149	N6	83	125
nr10	p7	6	n149	N6	85	200
nr10	p7	7	n149	N6	88	185
nr10	p7	8	n149	N6	70	150
nr10	p7	9	n149	N6	8	45
nr10	p7	10	n149	N6	103	200
nr10	p8	1	n2169	N1	72	165
nr10	p8	2	n2169	N1	5	-
nr10	p8	3	n2169	N1	73	170
nr10	p8	4	n2169	N1	50	140
nr10	p8	5	n2169	N1	78	170
nr10	p8	6	n2169	N1	95	200
nr10	p8	7	n2169	N1	34	130
nr10	p8	8	n2169	N1	80	180
nr10	p8	9	n2169	N1	30	105
nr10	p8	10	n2169	N1	80	-
nr10	p9	1	n196	N5	28	40
nr10	p9	2	n196	N5	90	140
nr10	p9	3	n196	N5	80	155
nr10	p9	4	n196	N5	-	-
nr10	p9	5	n196	N5	68	170
nr10	p9	6	n196	N5	48	160
nr10	p9	7	n196	N5	58	140
nr10	p9	8	n196	N5	49	75
nr10	p9	9	n196	N5	12	40
nr10	p9	10	n196	N5	51	120

vr10	p6	6	v4	V8	8	30
vr10	p6	7	v4	V8	52	100
vr10	p6	8	v4	V8	52	140
vr10	p6	9	v4	V8	51	110
vr10	p6	10	v4	V8	33	65
vr10	p7	1	v40	V8	63	130
vr10	p7	2	v40	V8	45	115
vr10	p7	3	v40	V8	64	140
vr10	p7	4	v40	V8	16	50
vr10	p7	5	v40	V8	45	70
vr10	p7	6	v40	V8	66	160
vr10	p7	7	v40	V8	72	180
vr10	p7	8	v40	V8	33	40
vr10	p7	9	n179	N5	60	150
vr10	p7	10	v40	V8	52	125
vr10	p8	1	n319	N7	40	75
vr10	p8	2	n319	N7	51	125
vr10	p8	3	n319	N7	76	135
vr10	p8	4	n319	N7	52	125
vr10	p8	5	n319	N7	60	120
vr10	p8	6	n319	N7	45	95
vr10	p8	7	n319	N7	61	140
vr10	p8	8	n319	N7	42	95
vr10	p8	9	n319	N7	50	115
vr10	p8	10	n319	N7	41	120
vr10	p9	1	n147	N6	52	110
vr10	p9	2	n147	N6	46	130
vr10	p9	3	v147	N6	46	95
vr10	p9	4	n147	N6	40	125
vr10	p9	5	n147	N6	38	20
vr10	p9	6	n147	N6	42	115
vr10	p9	7	n147	N6	68	145
vr10	p9	8	n147	N6	41	130
vr10	p9	9	n147	N6	33	125
vr10	p9	10	n147	N6	57	105