

Table - 38

Effect of Conc. H_2SO_4 on the germination of Seed of T. vogelii Hook.

Condition of Seed Duration of acid treatment.	PERIOD OF OBSERVATION									Remarks.
	24			48			72			
	Imbi- bed to germina- tion.	Imbi- bed	Unimbi- bed	Imbi- bed to germi- nation.	Imbi- bed	Unimbi- bed	Imbi- bed to germi- nation.	Imbi- bed.	Unimbibed	
10	36	17	47	53	0	47	53	0	47	Cotyledons healthy.
15	40	27	33	64	3	33	67	0	33	-do-
20	53	15	32	66	2	32	68	0	32	-do-
25	53	33	24	73	3	24	76	0	24	-do-
30	63	13	24	73	3	24	76	23	1	-do-
35	70	30	--	75	25	--	85	15	--	-do-
40	50	50	--	50	50	--	50	50	--	1 Scar noted on Cotyledons
45	40	60	--	40	60	--	40	60	--	5 Scar noted on Cotyledons
60	30	70	--	40	60	--	40	60	--	10 Scar noted on Cotyledons.

Table - 39

Photoperiodic Effect on germination of Seed.

Both the spp?

Period of Duration, Duration of light (L) & Dark (D)	24	48	72
6L + 18D	50	96	72 ?
12L + 12D	66	86	96
18L + 6D	56	70	83
24L	53	80	93
24D	30	53	60
18D + 6L	50	63	86
12D + 12L	46	76	86
6D + 18L	56	80	90
S.E.	\pm 0.37	\pm 0.97	\pm 0.77
C.D. at 5%	0.47	2.21	1.78

Table-40

Rate of germination (%) with effect of Temperature.

Duration of germ Temperature.	24	48	72
0°C	35	80	80
4°C	40	75	80
6°C	45	75	80
8°C	50	80	80
15°C	55	80	80
30°C	60	95	95
40°C	40	75	80
60°C	0	15	20
SE	± 1.8	± 2.5	± 0.97
CD at 5%	1.1	1.29	2.23

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Effect of storage on the viability of seeds of T. vogelii, collected in December, 1978.

% of germination Months	24 hrs	48 hrs	72 hrs	Leachate in m mhos
December 1978	41 ± 3	78 ± 4	80 ± 3	31
January 1979	33 ± 5	76 ± 5	88 ± 6	48
February 1979	33 ± 3	75 ± 2	76 ± 3	486 ?
March 1979	50 ± 4	60 ± 3	70 ± 4	49
April 1979	45 ± 3	61 ± 4	66 ± 3	50
May 1979	43 ± 4	75 ± 2	78 ± 2	54
June 1979	41 ± 3	86 ± 1	86 ± 2	54
July 1979	40 ± 2	56 ± 3	71 ± 4	61
August 1979	20 ± 3	45 ± 2	68 ± 3	67
September 1979	16 ± 1	26 ± 2	56 ± 1	74
October 1979	20 ± 2	45 ± 2	43 ± 2	78
November 1979	15 ± 3	20 ± 2	28 ± 2	92
December 1979	8 ± 1	16 ± 2	22 ± 2	108
January 1980	2 ± 1	5 ± 2	6 ± 2	186

Table - 42

Effect of storage and test with Tetrazolium chloride solution
in the seeds of T. vogelii Hook.

Year of Collection	Total No. of Seeds.	Rating Category				Optical density.
		I	II	III	IV	
1976	100	0	0	0	100	.10
1978	100	0	0	7	93	.106
1979	100	27	0	40	33	.125
1980	100	13	27	47	13	.16
1981	100	47	39	7	7	.17
1982	100	100	0	0	0	.23
S.E.						± 0.22
C.D. at 5%						0.06

Rating category : I - Whole seed coloured.

II - Embryo deeply coloured.

III - Embryo and cotyledons lightly coloured.

IV - No. Colouration.

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Effect of pH of solution of germination of seeds
T. vogelii Hook

pH	Na-phosphate			K-phosphate.		
	24 hrs	48 hrs	72 hrs	24 hrs	48 hrs	72 hrs
3	3	28	33	23	38	50
4	5	31	43	33	47	51
5	10	31	45	33	60	65
6	18	31	48	27	37	38
7	17	30	45	13	27	33
8	8	21	31	8	23	31
9	5	8	20	3	15	18
Water	28	58	58	28	58	58
S.E.	+ 0.90	+ 0.97	+ 1.14	+ 1.18	+ 1.25	+ 1.63
C.D. at 5%	2.77	2.26	1.87	2.88	2.91	2.7

Table - 45

Effect of KNO_3 and Thiourea on germination of seeds of T. vogelii Hook.

Conc. of solution (ppm)	KNO_3						THIOUREA					
	Light			Dark			Light			Dark		
	24	48	72	24	48	72	24	48	72	24	48	72
10^3	13	50	50	20	55	60	60	90	90	40	60	60
10^2	30	56	63	50	75	75	60	80	80	70	85	85
10^0	36	63	66	60	60	70	60	80	80	60	70	80
10^{-1}	36	70	70	45	60	70	60	80	80	60	65	70
10^{-2}	50	80	83	45	60	70	60	80	80	55	60	60
10^{-3}	43	66	80	45	60	70	60	80	80	50	55	60
10^{-4}	26	53	60	45	60	70	60	70	70	40	50	60
C	25	56	68	10	20	25						
S.E.	± 1.23	± 1.04	± 1.12	± 1.22	± 0.66	± 0.46	± 0.33	± 0.60	± 0.60	± 1.06	± 1.06	± 0.98
C.D.	0.83	0.77	0.79	0.83	0.61	0.51	0.43	0.58	0.58	0.77	0.77	0.74

Table - 46

Effect of GA on germination of seed of T. vogelii Hook

Conc. of solution (ppm)	Light			Dark		
	24	48	72	24	48	72
10^3	44	66	70	30	45	60
10^2	54	70	72	40	65	85
10^1	72	82	84	55	80	85
10^0	64	78	80	50	70	80
10^{-1}	64	78	80	50	70	80
10^{-2}	62	74	78	50	70	75
10^{-3}	50	70	74	50	65	75
10^{-4}	44	68	72	40	65	70
Control	26	56	68	10	20	25
SE	+ 1.35	+ 1.09	+ 0.51	+ 1.41	+ 1.79	+ 2.00
CD	0.87	0.78	0.53	0.89	1.01	1.06

Table - 47

Effect of H_2SO_4 in the seed of T. candida DC.

Condition of Seed Duration of germination. (in minutes).	24			48			72			Remarks.
	Imbi- bed to germi- nation.	Imbi- bed	Unimbi- bed	Imbi- bed to germi- nation.	Imbi- bed	Unimbi- bed	Imbi- bed to germi- nation	Imbi- bed	Unimbi- bed	
1	0	10	90	10	10	80	10	5	85	Cotyledons ?
2	0	20	80	20	20	60	30	10	60	-do-
3	0	30	70	30	10	60	40	10	50	-do-
4	0	40	60	40	10	50	50	5	55	-do-
5	5	40	55	30	20	50	50	10	40	-do-
10	5	65	30	65	20	15	75	15	10	-do-
15	15	80	5	75	20	5	90	10	0	-do-
20	25	70	5	95	5	0	100	0	0	-do-
25	50	45	5	100	0	0	100	0	0	No scars
30	20	75	5	100	0	0	100	0	0	-do-
45	30	70	20	100	0	0	100	0	0	Few scars on seeds coat.
60	10	90	0	90	10	0	90	10	0	Many scars on the seed coat.

Table - 48

Effect of Temperature on the germination of seeds of T.candida

<u>Duration of germination</u> Temperature	24	48	72
0°C	5	35	63
4°C	7	37	75
6°C	9	39	80
8°C	15	43	85
15°C	20	50	90
30°C	20	50	95
40°C	5	65	93
60°C	5	30	50
S.E.	+ 1.23 -	+ 1.04 -	+ 1.02 -
C.D. at 5%	0.29	0.27	0.26

Table - 49

Effect of pH on germination of seeds of T. candida DC.

pH of Solution.	K-phosphate			Na-phosphate		
	24	48	72	24	48	72
3	10	25	35	10	20	35
4	20	35	45	15	30	40
5	27	39	51	20	35	45
6	30	45	69	25	40	60
7	25	36	45	20	30	35
8	20	34	39	20	30	30
9	12	19	29	10	15	20
Water	20	50	65			
S.E.	± 0.81	± 1.16	± 1.63	± 0.69	± 1.01	± 3.88
C.D. at 5%	0.21	0.25	1.06	0.19	0.23	0.44

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Effect of photoperiodism in germination of seed of Tephrosia
Candida DC.

	24	48	72
6L + 18D	35	70	85
18D + 6L	25	65	75
6D + 18L	20	55	65
18L + 6D	45	80	90
24L	10	40	55
24D	5	50	65
12D + 12L	2	30	50
12L + 12D	3	25	40
S.E.	± 3.11	± 3.79	± 1.06
C.D.	1.43	3.09	.84

Table - 51

Effect of storage on the viability of seeds(% of germination)
in T. candida collected on February 1979.

<u>% of germination</u> Month.	24	48	72	Leachates m mos
February 1979	20 + 1	40 ± 1	99 ± 2	21
March 1979	30 + 2	45 ± 2	85 ± 3	24
April 1979	35 + 1	90 ± 3	99 ± 4	29
May 1979	40 + 3	90 ± 4	99 ± 3	34
June 1979	30 + 2	50 ± 2	95 ± 4	39
July 1979	15 + 1	55 ± 1	90 ± 1	42
August 1979	20 + 2	75 ± 2	85 ± 2	47
September 1979	20 + 3	70 ± 2	75 ± 2	49
October 1979	10 + 2	50 ± 2	65 ± 4	55
November 1979	10 + 2	40 ± 1	50 ± 3	59
December 1979	0	13 ± 1	20 ± 2	64
January 1980	0	10 ± 2	15 ± 2	69
February 1980	0	5 ± 1	9 ± 1	72

Table - 52

Effect of Thiourea and Potassium Nitrate on germination of seeds of T. candida in presence of light and dark.

Duration of germination Conc. of solution.	Thio						KNO ₃					
	L			D			L			D		
	24	48	72	24	48	72	24	48	72	24	48	72
10 ³	2	10	13	0	5	10	3	13	16	6	15	16
10 ²	3	10	18	0	8	13	5	15	18	7	15	20
10 ¹	5	12	18	0	8	15	6	15	20	8	18	20
10 ⁰	7	15	22	2	10	15	9	20	22	8	19	20
10 ⁻¹	8	17	22	3	10	17	5	19	21	9	20	24
10 ⁻²	10	30	45	5	12	20	5	17	21	6	20	20
10 ⁻³	9	28	43	3	8	15	3	16	20	5	15	18
10 ⁻⁴	6	20	27	3	8	13	2	15	19	4	15	16
Control	3	38	52	0	8	15						
S.E.	± 0.28	± 0.99	± 1.40	± 0.11	± 0.19	± 0.27	± 0.21	± 0.32	± 0.14	± 0.17	± 0.43	± 0.28
C.D. at 5%	0.40	0.75	0.89	0.38	0.33	0.39	0.34	0.42	0.50	0.31	0.49	0.40

Table-53

Effect of Gibberellic Acid in germination of seed of *T. Candida* DC in presence of light and dark.

	Gibberellic Acid					
	Light			Dark		
	24	48	72	24	48	72
10^3	12	26	40	5	33	49
10^2	15	35	48	8	39	57
10^1	15	40	57	12	36	51
10^0	14	40	55	12	33	45
10^{-1}	14	37	53	12	27	44
10^{-2}	14	35	52	8	26	43
10^{-3}	12	34	50	7	25	41
10^{-4}	12	17	50	4	19	48
C	12	40	56	11	31	48
S.E.	± 0.12	± 0.76	± 0.51	± 0.31	± 0.6	± 0.3
C.D. at 5%	0.26	0.66	0.54	0.41	0.58	0.43

Table - 54

Germination percentage with effect of GA, IAA, Kinetin and ABA in seed of *T. vogelii* Hook.

Period of Seedling Conc. of solution (ppm).	GA			IAA			Kinetin			ABA		
	24	48	72	24	48	72	24	48	72	24	48	72
10^3	44	66	70	30	54	59	2	8	12	21	39	46
10^2	54	70	72	42	69	74	62	74	78	43	54	56
10^1	72	82	84	43	71	75	64	74	78	44	55	57
10^0	64	78	80	59	73	75	68	76	80	47	60	62
10^{-1}	64	74	78	65	82	84	70	76	80	49	62	62
10^{-2}	62	74	76	62	72	75	74	78	82	52	62	64
10^{-3}	50	70	74	61	72	73	78	80	84	61	64	66
10^{-4}	44	68	72	59	68	73	74	76	76	55	62	65
C	26	56	68									
S.E.	+ 1.35	+1.09	+0.51	+1.47	+0.86	+ 0.66	+ 2.24	+2.29	+ 2.20	+1.18	+0.79	+0.67
CD	0.87	0.78	0.53	0.91	0.70	0.61	1.03	1.4	1.11	0.82	0.67	0.61