

# High Oleic Groundnut Variety

## “Girnar 4”

- High yielding Virginia bunch variety
- Average oleic acid content 78.5%
- Released for commercial cultivation in Gujarat, Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu
- Matures in 110 to 115 days
- Average shelling turn-over 67 %
- Average oil content 53 %
- Average 100-seed weight 41g
- Shows moderate resistance to Late leaf spot, Rust, Stem rot and Peanut bud necrosis disease (PBND)
- Shows moderate tolerance to Leaf hopper, Leaf miner, thrips and *Spodoptera litura*



**Girnar 4**

**Girnar 4 plant**



**Girnar 4 pods**



**Girnar 4 kernels**



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(An ISO 9001 : 2015 Certified Institute)  
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## Purpose of Description

**“Girnar 4”** was released in 2020 by the Central Sub-Committee on Crop Standards, Notification, and Release of Varieties, Department of Agriculture and Cooperation, Ministry of Agriculture and Farmers Welfare, Government of India, for cultivation in *kharif* season in Gujarat, Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu.

## Origin and Development

**“Girnar 4”** was released by ICAR-Directorate of Groundnut Research, Junagadh (ICAR-DGR). It derives its origin from a cross of high yielding, high oil content breeding line “ICGV 06420” and high oleic acid content Virginia runner genotype “Sun Oleic 95R”. It was advanced by bulking high yielding plants with uniform plant and pod characteristics in *kharif* season. It is adapted to *kharif* sowing with good agronomic management.

## Performance

**“Girnar 4”** was found 57% superior in pod yield over check GPBD 4 and 41% over TG 37A, but fell short by just 3% over ICGV 03043 (GJG 32). Besides, 56.4% superior in kernel yield over check GPBD 4 and 36.0% over TG 37A but was less by 3.8% over ICGV 03043 in coordinated trials over two years at six locations, Junagadh (Gujarat), Durgapura (Rajasthan), Dharwad (Karnataka), Tirupati (Andhra Pradesh), Palem (Telangana), Tindivanam (Tamil Nadu). It has appeared 5/11 times for pod and 7/11 times for kernel yield in the top three ranks. This variety also was found better for its high oil (53%), high oleic acid content (>78%) and high O/L ratio over all the checks.

**“Girnar 4”** has moderate tolerance to Late leaf spot, Rust, Stem rot and PBNB. **“Girnar 4”** has moderate tolerance to Leaf hopper, Leaf miner, thrips and *Spodoptera litura*.

## Plant Characters

**“Girnar 4”**, a Virginia bunch variety, has a semi-spreading habit with alternate flowering, lanceolate green leaves. It matures in 110 - 115 days at different locations and years during the *kharif* season.

## Pod and Kernel Characters

**“Girnar 4”** has mainly 2-seeded (occasionally 1-seeded) medium bold pods, with slight beak, shallow constriction and medium reticulation. It has an average shelling turn-over of 67%. Seeds are rose colored with 100-seed weight of 41 g. The oil content of kernels is 53%.

### Yield performance of “Girnar 4” and check varieties in various AICRPG trials, *Kharif* 2017 and 2018

Trial	Year	Number of locations	Mean yield (kg/ha)	Increase/decrease over check variety (%)		
				TG 37A (ZC)	GPBG 4 (ZC)	ICGV 03043 (ZC)
AVT-I	2017	06	P 3166	P 47	P 44	P -0.2
			K 2130	K 43	K 48	K -0.5
AVT-II	2018	05	P 3279	P 37	P 76	P -4.0
			K 2210	K 28	K 68	K -3.0
Weighted mean			<b>P 3218</b>	<b>P 41</b>	<b>P 57</b>	<b>P -3.0</b>
			<b>K 2133</b>	<b>K 36</b>	<b>K 56</b>	<b>K -4.0</b>

AVT = Advanced Varietal Trial

ZC= Zonal check; P= Pod Yield ; K= Kernel Yield

### Oleic acid content of “Girnar 4” and check varieties in various AICRPG trials, *kharif* 2017 and 2018

Trial	Year	Number of locations	Mean oleic acid content (%)	Increase/decrease over check variety (%)		
				TG 37A (ZC)	GPBG 4 (ZC)	ICGV 03043 (ZC)
AVT-I	2017	06	77.55	51.36	46.30	64.72
AVT-II	2018	05	79.72	43.86	45.69	41.56
Weighted mean			<b>78.54</b>	<b>47.96</b>	<b>46.03</b>	<b>54.19</b>

AVT = Advanced Varietal Trial

ZC= Zonal check

### Linoleic acid content of “Girnar 4” and check varieties in various AICRPG trials, *kharif* 2017 and 2018

Trial	Year	Number of locations	Mean linoleic acid content (%)	Increase/decrease over check variety (%)		
				TG 37A (ZC)	GPBG 4 (ZC)	ICGV 03043 (ZC)
AVT-I	2017	06	5.44	27.15	30.77	15.36
AVT-II	2018	05	3.91	34.65	32.17	36.56
Weighted mean			<b>4.75</b>	<b>30.56</b>	<b>31.41</b>	<b>25.00</b>

AVT = Advanced Varietal Trial

ZC= Zonal check

**Oleic acid to Linoleic acid ratio of “Girnar 4” and check varieties in various AICRPG trials, *kharif* 2017 and 2018**

Trial	Year	Number of locations	Mean oleic acid to linoleic acid ratio	Increase/decrease over check variety (%)		
				TG 37A (ZC)	GPBG 4 (ZC)	ICGV 03043 (ZC)
AVT-I	2017	06	14.25	1.89	1.50	4.21
AVT-II	2018	05	20.38	1.26	1.42	1.13
Weighted mean			<b>16.53</b>	<b>1.56</b>	<b>1.46</b>	<b>2.16</b>
AVT = Advanced Varietal Trial						
ZC= Zonal check						

**Reaction of “Girnar 4” and check varieties to major diseases in AICRPG trials (Range over Aliyarnagar, Dharwad, Jalgaon, Junagadh, Kadiri, Raichur, Vriddhachalam centers)**

Disease	“Girnar 4”	Checks		
		GG -20	JL-24	GPBD 4
Rust (1-9 scale):	0 - 3	0 - 7	0 - 3	0 - 2
Late leaf spot (1-9 scale):	1 - 6	1 - 7	7	3
Stem rot (%)	1 - 17.3	0 - 17.8	6.4 - 27.5	32.2
PBND (%)	0 - 6.3	0 - 32.5	0	0

**Incidence of major insect and pests in “Girnar 4” and control varieties at hot spot locations (Range over Dharwad, Latur, Raichur, Vriddhachalam centers)**

Insect/Pest	“Girnar 4”	Check
		GG -20
Leaf hopper (1-9 scale) :	1 - 3	1 - 2
Thrips (1-9 scale) :	1 - 2	1 - 2
<i>Spodoptera litura</i> (1-9 scale) :	1 - 3	1 - 5
Leaf miner (1-9 scale) :	1 - 3	1 - 3



**Field view of Girnar 4**

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