

## Note on Trials on Jonna (Jowar) Seed Varieties

By

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In my attempts to select the best strains of seeds in respect of crops I grow, Jonna was given prominence as the crop is the main food crop of drylands both for men and cattle. Here, for grain and fodder it is a *pairu* crop (*Rabi*) sown in November and a green fodder crop in *Muduru* (*Kharif*) season sown in July or August soon after the South-west monsoon breaks. In this tract the yellow-grained variety is very popular and the white-grained variety is only rarely grown. I feel the need of publishing my field records in support of my conclusions. Trial plots were taken up from a big block so that landslope, level of fertility and cultural operations might not vary. Soils of medium fertility were selected and the seed rate was the same for all strains. Observations and results were recorded without favour or prejudice.

**Yellow-grained Jowar:** The first trial was in the year 1940—41. This year T. 6, an improved strain of the Nandyal Research Station was compared with two local strains *pairu jonna* or *pairu Pacha* and *Muduru Jonna*. The results were as under, showing that T. 6 stood first.

S. No.	Strain	Date of		Extent of trial land	Yield of the trial plot		Yield per acre.		Rank
		Sowing	Harvest		Grain	Fod-der	Grain	Fod-der	
1	Pairu (Local)	22-11-1940	18-3-1941	0 50 acre	292	1086	584	2172	II
2	Muduru (Local)	"	"	"	128	756	256	1512	III
3	T. 6	"	14-3-1941	"	144	1200	888	2400	I

1944—45: This year the trial plot for each strain measured 17 cents, and for the sake of greater accuracy three plots, each measuring one cent, were cut for harvest. Two local strains, two best strains of Guntur and three best strains of Nandyal Research Station were taken for trial. These two Research Stations being in the adjacent districts and there being no Research station in this district for dry crops, local strains were taken up. The results were as under. The plots were sown on 14—11—1944 and harvested on 22—2—1945 except the two local strains which were harvested later, on 8—3—1945.

H=Date of harvest, G=Grain, F=Fodder. All figures denote weight in pounds.

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S. No.	Area of plot	Local (Muduru)		Local (Pairu)		G. J. 75		G. J. 103		N. 29/68		N. 28/3		T. 6	
		G	F	G	F	G	F	G	F	G	F	G	F	G	F
1	1 cent	5	13	8	31	8	21	10	21	12	44	6.0	30	12	42
2	"	9	15	8	31	7	20	10	25	9.5	40	7.5	24	16	38
3	"	9	23	8	28	7	15	7	26	4.5	18	4.5	12	7	25
Total yield		23	51	24	90	22	56	27	62	26	102	18	66	35	105
Average yield in a cent		7.7	17	8	30	7.3	18.7	9	20.7	8.7	34	6	22	11.7	35
Yield per acre		770	1700	800	3000	730	1870	900	2070	870	3400	600	2200	1170	3500
Value @ 10 lb. grain and 1 cwt. fodder per Rupee		77+15-3	80+26-3	73+16-11	90+18-8	87+30-6	60+19-11	117+31-4	= Rs.	= Rs.	= Rs.	= Rs.	= Rs.	= Rs.	= Rs.
Rank		V	IV	VI	III	II	VII*	I							

1946—47: From the results it is obvious that T. 6 scored the first rank and N. 29/68 now known as N. 1 stood second. With a view to confirm this result I compared these two varieties, when T. 6 yielded 18 lb. of more grain than N. 29/68. The Agriculture Demonstrator of the adjacent taluk, Kavali, found in his observations that N. 29/68 yielded better than T. 6, so for final confirmation trials were resumed in 1947—48. Another observation worthy of mention is that though the Guntur Research Station is nearer than Nandyal Research Station, to my farm, Guntur strains G. J. 75 and 103 did not fare better than the Nandyal strains N. 29/68, N. 28/3 and T. 6. Apart from the above, G. J. 916 of Guntur Research Station producing red grain was tried which yielded 500 lb. grain and 1,360 lb. fodder per acre. For red grain there is no good market. A variety from the same Research Station viz., G. J. 869 was tried and the result was 400 lb. grain and only 560 lb. fodder per acre.

1947—48: Whether it was T. 6 or N. 29/68 (N. 1) both were produced in Nandyal Research Station and so I got two more strains of the Research Station viz., N. 4 and N. 294 besides N. 29/68 (N. 1) and T. 6. These four improved strains were compared with a local variety and the results were as under:

G = Grain, F = Fodder and figures against them denote weights in pounds and ounces.

S. No.	Area of Plot	N. 4		N. 294		T. 6		N. 1		Local pairu pacha	
		F.	G.	F.	G.	F.	G.	F.	G.	F.	G.
1	One Cent.	25.0	4.4	37.0	5.8	22.0	6.0	41.0	5.8	22.0	6.5
2	"	35.0	5.8	45.0	5.8	16.0	6.0	46.0	7.8	20.0	7.0
3	"	23.0	3.8	24.0	3.8	18.0	5.8	38.0	6.8	19.0	5.0
Total ...		83.0	13.4	106.0	14.8	56.0	17.8	125.0	19.8	61.0	18.5
Average for a Cent ...		27.6	4.7	35.5	4.13	18.11	5.13	41.11	6.8	20.5	6.2
Yield per acre ...		2770	444	3530	481	1870	581	4170	650	2030	613
		Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
Cash value at 10 lb.		24—12 plus	31—8 plus	16—12 plus	37—4 plus	18—2 plus	44—6 =	48—2 =	58—2 =	65—0 =	61—5 =
Grain and 1 cwt.		44—6 =	48—2 =	58—2 =	65—0 =	61—5 =	9—2—0	79—10—0	74—14—0	102—4—0	79—7—0
fodder per rupee ...		9—2—0	79—10—0	74—14—0	102—4—0	79—7—0	V	II	IV	I	III
Rank ...		V	II	IV	I	III					

It is obvious from the above results that N. 1 stands first, while N. 294 and the local variety stand almost on a par. The value of grain and fodder are both taken into account in view of their equal utility. Fodder is valued at 1 Cwt. and Grain @ 10 lb. per rupee, at fair market rates. The results indicate that N. 1 scored the first rank with a difference of about Rs. 23/- per acre and it excels the local strain or N. 294 that stood second by 22%. N. 294 is said to be a selection from T. 6. Previously it was observed by me that acclimatized T. 6 proved inferior to seeds freshly imported from the Research Station. This is said to be due to hybridization resulting from contact with various local types grown in the near surroundings. The deterioration was marked, as was observed by me in 1942—43 and the observations were as under.

	Grain lb.	Fodder lb.
1. Local Jonna	437	2256 per acre.
2. Acclimatized T. 6	490	1560 "
3. Freshly imported T. 6 (From Nandyal Research Station)	770	3240 ;

In three generations T. 6 deteriorated almost to the level of the local type. When compared to the crop grown with fresh seeds, the fresh one yielded roughly 60% over either the local or the hybridized T. 6.

**Suggestions:** In view of my experiences on the performances of improved types of Jonna, I would offer the following suggestions for further development.

(1) Improved strains of a particular Research Station will benefit the tract similar to the locality of the Station in respect of soil type, fertility, climatic conditions, distribution of rain, cultural operations etc.,