

Table S1: List of 24 cultivars examined under PEG-6000 induced drought stress.

No.	Name	Chinese Name	Abbreviation	Ecotype	Origin
V1	Chuanyou 81	川油 81	CY 81	Semi-winter	Crop Research Institute, Sichuan Academy of Agricultural Sciences.
V2	Yanyouza 3	盐油杂 3 号	YYZ 3	Semi-winter	Jiangsu Coastal Area Agricultural Science Research Institute, Yancheng.
V3	Yuyou 28	渝油 28	YY 28	Semi-winter	Southwest University.
V4	Chuanyou 36	川油 36	CY 36	Semi-winter	Crop Research Institute, Sichuan Academy of Agricultural Sciences.
V5	Jinyouza 158	金油杂 158	JYZ 158	Semi-winter	Huazhong Agricultural University.
V6	Zheyou 50	浙油 50	ZY 50	Semi-winter	Institute of crop and nuclear technology utilization, Zhejiang Academy of Agricultural Sciences.
V7	Qinyou 33	秦优 33	QY 33	Semi-winter	Shaanxi hybrid rape Research Center.
V8	Zheyou 51	浙油 51	ZY 51	Semi-winter	Institute of crop and nuclear technology utilization, Zhejiang Academy of Agricultural Sciences.
V9	Xiangzayou 518	湘杂油 518	XZY 518	Semi-winter	Hunan Agricultural University, Changsha Jintian Seed Industry.
V10	Guohao oil 8	国豪油 8 号	GHY 8	Semi-winter	Sichuan Guohao Seed Industry.
V11	Zheyouza 108	浙油杂 108	ZYZ 108	Semi-winter	Institute of crop and nuclear technology utilization, Zhejiang Academy of Agricultural Sciences
V12	Ningza1838	宁杂 1838	NZ 1838	Semi-winter	Institute of economic crops, Jiangsu Academy of Agricultural Sciences.
V13	Xiangzayou 553	湘杂油 553	XZY 553	Semi-winter	Hunan Agricultural University, Changsha Jintian Seed Industry.
V14	Yangyou 9	扬油 9 号	YY 9	Semi-winter	Jiangsu Xiahe Agricultural Research Institute.
V15	Huayouza 62	华油杂 62	HYZ 62	Semi-winter	Huazhong Agricultural University.
V16	Qingyou 3	庆油 3 号	QY 3	Semi-winter	Chongqing Academy of Agricultural Sciences, Chongqing Zhongyi Seed Industry.
V17	QinYou 7	秦优 7 号	QY 7	Semi-winter	Shaanxi Hybrid Rapeseed Research Center.
V18	Zhongshuang 11	中双 11 号	ZS 11	Semi-winter	Institute of oil crops, Chinese Academy of Agricultural Sciences.
V19	Yangguang 2009	阳光 2009	YG 2009	Semi-winter	Institute of oil crops, Chinese Academy of Agricultural Sciences.

V20	Huayouza 72	华油杂 72	HYZ 72	Semi-winter	Huazhong Agricultural University.
V21	Qingyou 1	庆油 1 号	QY 1	Semi-winter	Chongqing Zhongyi Industry.
V22	Tianyouza 283	天油杂 283	TYZ 283	Semi-winter	Wuhan Wuda Tainyuan Biological Technology Co. Ltd.
V23	Ganza 1	甘杂 1 号	GZ 1	Semi-winter	Northwest Agricultural & Forestry University.
V24	Fengyou 520	沔油 520	FY 520	Semi-winter	Hunan Crop Research Institute.

Table S2: Germination and seedling's traits description and abbreviations under control and polyethylene glycol 6000 (PEG-6000) drought treatments and the drought tolerance indices (DTIs) used to evaluate traits response to drought treatments.

Name	Abbreviation	Description
Final germination %	FG%	Calculated as $FG\% = n / N \times 100$ where n is the number of germinated seeds (radicle length approximately 2 mm) and N is the total number of sown seeds.
Shoot length	ShL	The maximum length of the shoot is measured from the point of attachment (cm).
Root length	RL	The maximum length of fresh roots measured from the point of attachment (cm).
Shoot fresh weight	ShFW	Weight of fresh shoot detached from the grain and immediately weighed in grams.
Root fresh weight	RFW	The fresh weight of roots of each plant separated from the seed and was immediately weighed in grams.
Shoot dry weight	ShDW	Weight of dried fresh shoot put in kraft bag and dried in the oven at 75 ± 5 C until constant weight in grams.
Root dry weight	RDW	Weight of dried fresh roots put in kraft bag, dried in the oven at 75 ± 5 C until constant weight in grams.
Drought tolerance index (Final germination DTI)	DTI (FG%)	$FG\% \text{ under PEG drought} / FG\% \text{ under control} \times 100$ FG-DTI10%, and FG-DTI15%
Shoot length drought tolerance index	ShL-DTI	$ShL \text{ under PEG drought} / SL \text{ under control} \times 100$ ShL-DTI10% and ShL-DTI15%
Shoot fresh weight tolerance index	ShFW-DTI	$ShFW \text{ under PEG drought} / ShFW \text{ under control} \times 100$ ShFW-DTI10% and ShFW-DTI15%
Shoot dry weight drought tolerance index	ShDW-DTI	$SDW \text{ under PEG drought} / SDW \text{ under control} \times 100$ ShDW-DTI10% and ShDW-DTI15%
Root length drought tolerance index	RL-DTI	$RL \text{ under PEG drought} / RL \text{ under control} \times 100$ RL-DTI10% and RL- RL-DTI15%
Root fresh weight drought tolerance index	RFW-DTI	$RFW \text{ under PEG drought} / RFW \text{ under control} \times 100$ RFW-DTI10% and RFW-DTI15%
Root dry weight drought tolerance index	RDW-DTI	$RDW \text{ under PEG drought} / RDW \text{ under control} \times 100$ RDW-DTI10% and RDW-DTI15%

Table S3: Final germination percentage of three cultivars to select the concentration of PEG-6000.

Treatment	YYZ 3	XZY 518	GZ 1
CK	99.44 ^a	99.44 ^a	93.88 ^{bcd}
PEG-5%	99.44 ^a	98.33 ^{ab}	95.00 ^{abc}
PEG-10%	98.88 ^a	99.44 ^a	93.88 ^{bcd}
PEG-15%	99.44 ^{ab}	91.11 ^{cd}	90.00 ^{ced}
PEG-20%	85.55 ^{ef}	88.88 ^{de}	80.55 ^f
PEG-25%	8.888 ^g	20.00 ^g	24.44 ^g
Treatment		**	
Variety		**	
Treatment×Variety		ns	

Data are presented as mean values with different letters, which denote statistically significant differences between means within each indicator column among cultivars according to Fisher's least significant difference (LSD) test. ** showed significant difference at $P \leq 0.05$ and ns is denoting non-significant interaction..