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## 大豆不同杂交组合杂种优势分析

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摘要: 为探讨国内与国外大豆杂交后杂种优势大小及规律, 利用9个亲本做了20个杂交组合, 并对其中亲优势和超亲优势进行了分析。结果表明: 大豆部分形态性状、产量性状、品质性状具有较高的杂种优势, 但不同类型杂交组合间差异显著。在单株粒重上被测组合多数超过双亲均值, 主茎节数与株高优势表现相似, 株高优势强的组合主茎节数的优势率也较高。单株荚数和单株粒数的中亲和超亲优势表现相似, 分别有6个和8个组合表现为负值, 表现为负向中亲优势的组合, 超亲优势也为负值。茎粗具有较好的中亲优势。百粒重多表现为超高亲优势。脂肪和蛋白质含量多数介于双亲之间, 超亲优势多数组合为负向。

Abstract: In order to evaluate the heterosis of domestic and foreign soybean hybrid, the thesis analyzed the heterosis of twenty hybrid combinations with 9 soybean germplasm, 4 from China and 5 from abroad, as parents. The results showed that some of the morphological, yield and quality traits had higher heterosis, but there were obvious differences among different combinations. Seed weight per plant is heavier than average of parents. The heterosis of number of node and plant height was similar. The mid-parent heterosis(MPH) and the better parents heterosis (BPH) of pods per plant and seed number per plant had similar performance. Six combinations were negative in MPH of pods per plant and 8 combinations were negative in BPH of seed number per plant. Stem diameter is better in MPH. The majority of 100-seed weight in F<sub>1</sub> had higher BPH. Fat and protein content were between parents in majority of hybrid, and the majority of combinations were negative in BPH.

### 参考文献/References:

- [1] 田佩占. 大豆杂种一代优势及其与亲本关系的研究 [J]. 作物学报, 1981, 7(4): 225-232. (Tian P Z. Studies on heterosis of F<sub>1</sub>hybrids in soybean and its relationship to the corresponding parents [J]. Acta Agronomica Sinica, 1981, 7 (4): 225-232.)
- [2] 马育华, 盖钧镒, 胡蕴珠. 大豆杂种世代的遗传变异研究 II. 配合力及有关遗传参数 [J]. 作物学报, 1983, 9(4): 249-257. (Ma Y H, Gai J Y, Hu Y Z. Studies on genetic variation of hybrid generations in soybean. II. Combining ability and related genetic parameters [J]. Acta Agronomica Sinica, 1983, 9(4): 249-257.)
- [3] 孙寰, 赵丽梅, 王曙明, 等. 大豆杂种优势利用研究进展 [J]. 中国油料作物学报, 2003, 25(1): 92-96. (Sun H ,Zhao L M, Wang S M, et al. Progress in soybean heterosis utilization [J]. Chinese Journal of Oil Crop Sciences, 2003, 25(1): 92-96.)
- [4] 王曙明, 孙寰, 王跃强, 等. 大豆杂种优势及其高优势组合选配的研究 I. F<sub>1</sub>代籽粒产量的杂种优势与高优势组合选配 [J]. 大豆科学, 2002, 21(3) : 161-167. (Wang S M, Sun H, Wang Y Q, et al. Studies on heterosis and apogamy of highly heterotic combinations in soybean I .F<sub>1</sub> seed yield heterosis and apogamy of highly heterotic combinations [J]. Soybean Science, 2002, 21(3):161-167.)
- [5] 兰进好, 张宝石, 周鸿飞. 作物杂种优势遗传基础研究进展 [J]. 中国农学通报, 2005, 12(1): 114-119. (Lan J H, Zhang B S, Zhou H F. Progress in the study on the genetic basis of heterosis in crops [J]. Chinese Agricultural Science Bulletin, 2005, 12(1): 114-119.)
- [6] Wilcox J R. Soybeans: improvement, production and uses [M]. Madison, Wisconsin, 1987: 215-217.
- [7] Rant V M, Halwanker G B, Patil V P. Heterosis in soybean [J]. Soybean Genetic Newsletter, 1988, 15: 57-60.

- [8]Metha S K, Lal M S, Beohar A B L.Heterosis in soybean crosses[J].*Indian Journal of Agricultural Sciences*,1984,54(8):682-684.
- [9]马育华,盖钧镒.大豆杂种世代的遗传变异研究[C]//中美大豆科学讨论会论文集.中国大豆科技情报交流中心,1983:94-103.(Ma H,Gai J Y.Studies on genetic variation of successive generations after hybridization in soybeans[C]//Sino-US soybean scientific discussion collection.Chinese soybean technology information exchange centre,1983:94-103.)
- [10]黄承运,满为群,陈怡,等.东北大豆丰产种质的拓宽与改良 I .品种间杂交F<sub>1</sub>代杂种优势与配合力分析[J].大豆科学,1993,12(3): 190-195.(Huang C Y, Man W Q, Chen Y, et al.Improvement of soybean high yield germplasm in northeast I .Analysis heterosis and combining ability of F<sub>1</sub>intervarietal cross [J].*Soybean Science*, 1993,12(3):190-195.)
- [11]谢甫绵,丑晓奇,张惠君,等.大豆品种远缘杂交F<sub>1</sub>代的杂种优势分析[J].大豆科学, 2007,26 (6) : 857-861.( Xie F T, Chou X Q ,Zhang H J, et al.F<sub>1</sub>Heterosis of soybean crossed from varieties released in different geographic places and decades[J].*Soybean Science*, 2007,26(6):857-861.)
- [12]李磊,李智,王敏,等.大豆杂种优势及其与双亲遗传关系的研究[J].安徽农业科学, 1998,26 (4) : 293-295. (Li L, Li Z, Wang M, et al.Studies of heterosis and genetics relations of parents in soybean[J].*Journal of Anhui Agricultural Sciences*,1998,26(4):293-295.)

## 相似文献/References:

- [1]刘章雄,李卫东,孙石,等.1983~2010年北京大豆育成品种的亲本地理来源及其遗传贡献[J]. (darticle.aspx?type=view&id=201301001)大豆科学, 2013, 32 (01):1. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 002]
- LIU Zhang-xiong, LI Wei-dong, SUN Shi, et al.Geographical Sources of Germplasm and Their Nuclear Contribution to Soybean Cultivars Released during 1983 to 2010 in Beijing[J].*Soybean Science*, 2013, 32 (05):1. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 002]
- [2]李彩云,余永亮,杨红旗,等.大豆脂质转运蛋白基因GmLTP3的特征分析[J]. (darticle.aspx?type=view&id=201301002)大豆科学, 2013, 32 (01):8. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 003]
- LI Cai-yun, YU Yong-liang, YANG Hong-qi, et al.Characteristics of a Lipid-transfer Protein Gene GmLTP3 in Glycine max [J].*Soybean Science*, 2013, 32 (05):8. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 003]
- [3]王明霞,崔晓霞,薛晨晨,等.大豆耐盐基因GmHAL3a的克隆及RNAi载体的构建[J]. (darticle.aspx?type=view&id=201301003)大豆科学, 2013, 32 (01):12. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 004]
- WANG Ming-xia,CUI Xiao-xia,XUE Chen-chen, et al.Cloning of Halotolerance 3 Gene and Construction of Its RNAi Vector in Soybean (Glycine max) [J].*Soybean Science*, 2013, 32 (05):12. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 004]
- [4]张春宝,李玉秋,彭宝,等.线粒体ISSR与SCAR标记鉴定大豆细胞质雄性不育系与保持系[J]. (darticle.aspx?type=view&id=201301005)大豆科学, 2013, 32 (01):19. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 005]
- ZHANG Chun-bao, LI Yu-qiu, PENG Bao, et al.Identification of Soybean Cytoplasmic Male Sterile Line and Maintainer Line with Mitochondrial ISSR and SCAR Markers[J].*Soybean Science*, 2013, 32 (05):19. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 005]
- [5]卢清瑶,赵琳,李冬梅,等.RAV基因对拟南芥和大豆不定芽再生的影响[J]. (darticle.aspx?type=view&id=201301006)大豆科学, 2013, 32 (01):23. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 006]
- LU Qing-yao, ZHAO Lin, LI Dong-mei, et al.Effects of RAV gene on Shoot Regeneration of Arabidopsis and Soybean [J].*Soybean Science*, 2013, 32 (05):23. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 006]
- [6]杜景红,刘丽君.大豆fad3c基因沉默载体的构建[J]. (darticle.aspx?type=view&id=201301007)大豆科学, 2013, 32 (01):28. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 007]
- DU Jing-hong,LIU Li-jun.Construction of fad3c Gene Silencing Vector in Soybean[J].*Soybean Science*, 2013, 32 (05):28. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 007]
- [7]张力伟,樊颖伦,牛腾飞,等.大豆“冀黄13”突变体筛选及突变体库的建立[J]. (darticle.aspx?type=view&id=201301008)大豆科学, 2013, 32 (01):33. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 008]
- ZHANG Li-wei,FAN Ying-lun,NIU Teng-fei, et al.Screening of Mutants and Construction of Mutant Population for Soybean Cultivar "Jihuang13" [J].*Soybean Science*, 2013, 32 (05):33. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 008]
- [8]盖江南,张彬彬,吴璐,等.大豆不定胚悬浮培养基因型筛选及基因枪遗传转化的研究[J]. (darticle.aspx?type=view&id=201301009)大豆科学, 2013, 32 (01):38. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 009]
- GAI Jiang-nan, ZHANG Bin-bin, WU Yao, et al.Screening of Soybean Genotypes Suitable for Suspension Culture with Adventitious Embryos and Genetic Transformation by Particle Bombardment[J].*Soybean Science*, 2013, 32 (05):38. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 009]
- [9]王鹏飞,刘丽君,唐晓飞,等.适于体细胞胚发生的大豆基因型筛选[J]. (darticle.aspx?type=view&id=201301010)大豆科学, 2013, 32 (01):43. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 010]
- WANG Peng-fei, LIU Li-jun, TANG Xiao-fei, et al.Screening of Soybean Genotypes Suitable for Somatic Embryogenesis [J].*Soybean Science*, 2013, 32 (05):43. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 010]
- [10]刘德兴,牛海,杨存义,等.耐酸铝大豆品种资源的筛选与鉴定[J]. (darticle.aspx?type=view&id=201301011)大豆科学, 2013, 32 (01):46. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 011]
- LIU De-xing, NIAN Hai, YANG Cun-yi, et al.Screening and Identifying Soybean Germplasm Tolerant to Acid Aluminum [J].*Soybean Science*, 2013, 32 (05):46. [doi:10.3969/j. issn. 1000-9841. 2013. 01. 011]
- [11]颜秀娟,李明姝,王志国,等.不同生态环境下大豆农艺性状的遗传效应及杂种优势分析[J]. (darticle.aspx?type=view&id=201306001)大豆科学, 2013, 32 (06):727. [doi:10.11861/j. issn. 1000-9841. 2013. 06. 0727]
- YAN Xiu-juan, LI Ming-shu, WANG Zhi-guo, et al.Analysis for Genetic Effect and Heterosis of Agronomic Traits in Soybean under Different Ecological Environments[J].*Soybean Science*, 2013, 32 (05):727. [doi:10.11861/j. issn. 1000-9841. 2013. 06. 0727]
- [12]焦东燕,刘兵强,闫龙,等.大豆亲本差异对杂种F<sub>1</sub>产量的影响[J]. (darticle.aspx?type=view&id=201104009)大豆科学, 2011, 30 (04):574. [doi:10.11861/j. issn. 1000-9841. 2011. 04. 0574]
- JIAO Dong-yan, LIU Bing-qiang, YAN Long, et al.Effect of Soybean Parental Difference on F<sub>1</sub> Yield Heterosis [J].*Soybean Science*, 2011, 30 (05):574. [doi:10.11861/j. issn. 1000-9841. 2011. 04. 0574]
- [13]王昭明,孙寰,赵丽梅,等.中国大豆雄性不育和杂种优势利用研究进展与问题分析[J]. (darticle.aspx?type=view&id=200906031)大豆科学, 2009, 28 (06):1089. [doi:10.11861/j. issn. 1000-9841. 2009. 06. 1089]
- WANG Shu-ming, SUN Huan, ZHAO Li-mei, et al.Progress and Problem Analysis on Soybean Male Sterility and Heterosis Exploitation in China[J].*Soybean Science*, 2009, 28 (05):1089. [doi:10.11861/j. issn. 1000-9841. 2009. 06. 1089]
- [14]李杰坤,张磊,孙文勤,等.大豆不育系的恢复系筛选及其杂种优势利用研究[J]. (darticle.aspx?type=view&id=201004011)大豆科学, 2010, 29 (04):598. [doi:10.11861/j. issn. 1000-9841. 2010. 04. 0598]
- LI Jie-kun, ZHANG Lei, SUN Wen-qin, et al.Screening of Restorer Lines of a Soybean Sterile Line and Utilization of Its Heterosis[J].*Soybean Science*, 2010, 29 (05):598. [doi:10.11861/j. issn. 1000-9841. 2010. 04. 0598]
- [15]谢甫绵,丑晓奇,张惠君,等.大豆品种远缘杂交F<sub>1</sub>代的杂种优势分析[J]. (darticle.aspx?type=view&id=200706010)大豆科学, 2007, 26 (06):856. [doi:10.3969/j. issn. 1000-9841. 2007. 06. 010]
- XIE Fu-ti, CHOU Xiao-qi, ZHANG Hui-jun, et al.F<sub>1</sub>HETEROSESIS OF SOYBEANS CROSSED FROM VARIETIES RELEASED IN DIFFERENT GEOGRAPHIC PLACES AND DECADES[J].*Soybean Science*, 2007, 26 (05):856. [doi:10.3969/j. issn. 1000-9841. 2007. 06. 010]
- [16]王昭明孙寰王强赵丽梅李楠付连舜.大豆杂种优势及其高优势组合选配的研究 I .F1 代子粒产量的杂种优势与高优势组合选配[J]. (darticle.aspx?type=view&id=200203001)大豆科学, 2002, 21 (03):161. [doi:10.11861/j. issn. 1000-9841. 2002. 03. 00161]
- Wang ShumingSun HuanWang YueqiangZhao LimeiLi Nan. STUDIES ON HETEROSESIS AND SCREENING OF HIGHLY HETEROSESIS COMBINATIONS IN SOYBEAN I . F1 SEED YIELD HETEROSESIS AND SCREENINGOF HIGHLY HETEROSESIS COMBINATIONS[J].*Soybean Science*, 2002, 21 (05):161. [doi:10.11861/j. issn. 1000-9841. 2002. 03. 00161]

- [17] 李杰坤 张磊 黄志平 张丽亚 戴瓯和. 利用M型质核互作不育系配制高产组合的研究[J]. ([darticle.aspx?type=view&id=200204001](#)) 大豆科学, 2002, 21 (04):241. [doi:[10.11861/j.issn.1000-9841.2002.04.0241](https://doi.org/10.11861/j.issn.1000-9841.2002.04.0241)]
- Li Jiekun Zhang Lei Huang Zhiping Zhang Liya Dai Ouhe. STUDY ON MAKING SOYBEAN CROSS COMBINATIONWHTH MTYPE MALE STERIL LINES HETEROSES OF F1 AND F2 GENERATIONYIELDS OF HYBRID SOYBEAN AND ITS UTILIZATION[J]. Soybean Science, 2002, 21 (05):241. [doi:[10.11861/j.issn.1000-9841.2002.04.0241](https://doi.org/10.11861/j.issn.1000-9841.2002.04.0241)]
- [18] 张博 邱丽娟 常汝镇. 利用大豆育成品种的SSR 标记遗传距离预测杂种优势的初步研究[J]. ([darticle.aspx?type=view&id=200303002](#)) 大豆科学, 2003, 22 (03):166. [doi:[10.11861/j.issn.1000-9841.2003.03.0166](https://doi.org/10.11861/j.issn.1000-9841.2003.03.0166)]
- Zhang Bo Qiu Lijuan Chang Ruzhen. PRIMARY STUDY ON PREDICTING HETEROSES BY SSR MARKERDISTANCE AMONG SOYBEAN CULTIVARS[J]. Soybean Science, 2003, 22 (05):166. [doi:[10.11861/j.issn.1000-9841.2003.03.0166](https://doi.org/10.11861/j.issn.1000-9841.2003.03.0166)]
- [19] 田佩占, 闫日红. 大豆杂种一代籽粒产量和营养体优势与组合选择效果的关系[J]. ([darticle.aspx?type=view&id=199602015](#)) 大豆科学, 1996, 15 (02):110. [doi:[10.11861/j.issn.1000-9841.1996.02.0110](https://doi.org/10.11861/j.issn.1000-9841.1996.02.0110)]
- [J]. Soybean Science, 1996, 15 (05):110. [doi:[10.11861/j.issn.1000-9841.1996.02.0110](https://doi.org/10.11861/j.issn.1000-9841.1996.02.0110)]
- [20] 梁慧珍, 李卫东, 许阳, 等. 大豆雄性不育遗传及基因工程创造途径[J]. ([darticle.aspx?type=view&id=200404012](#)) 大豆科学, 2004, 23 (04):296. [doi:[10.11861/j.issn.1000-9841.2004.04.0296](https://doi.org/10.11861/j.issn.1000-9841.2004.04.0296)]
- [J]. Soybean Science, 2004, 23 (05):296. [doi:[10.11861/j.issn.1000-9841.2004.04.0296](https://doi.org/10.11861/j.issn.1000-9841.2004.04.0296)]

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