数据资源：林业专题资讯

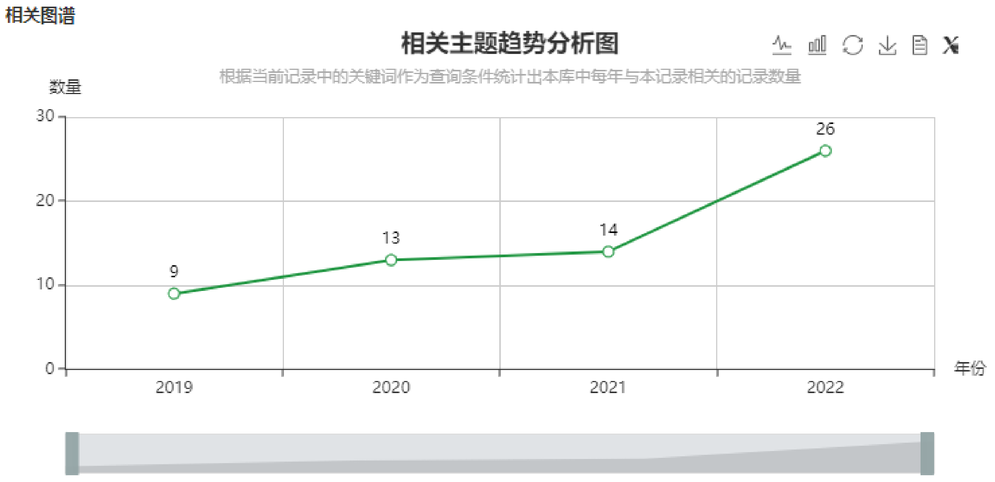
Differences in drought resistance in nine North American hybrid poplars

编号	040019103
推送时间	20190617
研究领域	森林培育
年份	2019
类型	期刊
语种	英语
标题	Differences in drought resistance in nine North American hybrid poplars
来源期刊	trees
期	第191期
发表时间	20190405
关键词	Populus; Physiology; Gene expression; ABA; Ranking; Indicator gene;
摘要	Poplar hybrids are cultivated in North America for environmental applications, agroforestry, and the pulp and paper industry primarily because of their fast growth and limited nutrient requirement. For the same reasons, they have been identified as suitable species for carbon sequestration and as a potential feedstock for carbon–neutral production of energy. The clones deployed on the Canadian prairies are generally regarded as drought sensitive, which poses a problem as water availability has steadily decreased in this region over the past century and a severe water crisis has been predicted. To approach this problem, we tested nine commonly deployed North-American hybrid poplars, developed for large-scale cultivation in the Canadian prairies, for their physiological responses to drought, resulting in a ranking of drought resistance. The difference between the clones showing the most and the least response of drought stress was large, and we used these clones to further examine the differences in the expression of genes known to be up-regulated in response to drought stress. This interrogation showed significant differences in transcript abundance that largely reflected the physiological status of the tested clones, but also many genes being down rather than up-regulated in response to drought stress in the drought-tolerant clone. In particular, putative positive and negative regulators of abscisic acid signaling were expressed at levels consistent with a potential role in observed differences in drought resistance.
服务人员	孙小满
PDF文件	浏览全文

相关记录 更多 ›

- Exocyst subunit VviExo70B is degraded by ubiquitin ligase VviPUB19 and they reg... 2023-03-06
- ThASR3 confers salt and osmotic stress tolerances in transgenic Tamarix and Arab... 2023-01-09
- AtTLP2, a Tubby-like protein, plays intricate roles in abiotic stress signalling 2023-01-30
- Identification of TPS-d subfamily genes and functional characterization of three m... 2022-12-05
- Characterization of lncRNAs involved in drought response in Betula platyphylla 2022-12-12
- The OPEN STOMATA1–SPIRAL1 module regulates microtubule stability during abs... 2023-02-13

相关图谱



相关主题

基因表达 生理 生理学
花木生理性落叶病 辽胡1号杨
灰杨 大杨 大叶钻天杨 日本山杨
智利黑杨

相关论文

- 伤处理和乙烯对桃ACC氧化酶基因表...
- Comparing growth and fine root di...
- BACTERIAL SWOLLEN STEM CANK...
- Somatic Embryogenesis from Cell S...
- Short-day treatment during the gr...
- 茉莉酸甲酯和ABA对野葛毛状根中异...