

论文

麦角菌在黑麦品种上的接种栽培

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摘要:

1957年在北京及哈尔滨以各种野生麦角所分离的不同菌种在张北、佳木斯等9个不同的黑麦品种上进行了接种栽培。春黑麦较冬黑麦的感染力强,春黑麦中又以张北及佳木斯最易感病,对自拂子茅(*Claviceps epigeios*(L) Roth)、披碱草(*Clinelymus dahuricus* Nevski)、老芒麦(*Clinelymus sibiricus*(L)Nevski)、黑麦(*Secale cereale* L.)、高滨麦(*Clinelymus excelsus* Nevski),及*Agropyron* sp.6个不同寄主所分离的菌种亦均感染;公主岭及平鲁黑麦感染性较差。不同菌种中以分离自拂子茅的菌种寄生性最强,侵染所有4个春黑麦品种及一个冬黑麦品种。分离自拂子茅的6个不同菌系中以B<sub>5</sub>的寄生性最强,公主岭、张北及佳木斯3个品种对B<sub>5</sub>的感染率均在70%以上;B<sub>1</sub>次之,3个黑麦品种对B<sub>1</sub>的感染率均在50%以上;B<sub>7</sub>最差,公主岭及张北黑麦对B<sub>7</sub>的感染率为5—10%,不同接种方法以孢子液注射法效果最佳,浸渍法次之,喷雾法最差。每min<sup>3</sup>接种液中孢子数目在600—9600间浓度愈高致病力愈强。分离自拂子茅麦角(*Claviceps microcephala*)的不同菌系在各种黑麦品种上所生的菌核较原寄主上的菌核大34倍。B<sub>1</sub>与B<sub>5</sub>在不同黑麦品种上所生麦角的含硷量为0.22—0.40%,远较自然条件下所产黑麦麦角(*C.purpurea* Tul.)的含硷量(0.06%)为高,也超过我国药典所规定0.2%的标准。B<sub>5</sub>的产硷能力高于B<sub>1</sub>。不同品种中以佳木斯黑麦所产菌核的含硷量较高,公主岭及平鲁次之,张北黑麦的麦角含硷量最低。

关键词:

THE CULTIVATION OF ERGOTS ON RYE

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Abstract:

The cultivation of ergot on rye varieties with ergot isolates from different hosts was performed both in Peking and Harbin in 1957. In general, spring rye were more susceptible than winter rye. Varieties from Changpei and Chamoshih were the most susceptible ones among spring ryes and were heavily infected with isolates from *Claviceps epigeios*, *Clinelymus dahuricus*, *Clinelymus sibiricus*, *Climelymus excelsus*, rye and *Agropyron* spp. Ergot isolates from *C. epigeios*, were more virulent than those isolated from other hosts. Of the six isolates from *C. epigeios* tested, B<sub>5</sub> was the most virulent, causing 70% infection on different varieties of spring rye. B<sub>1</sub> was less virulent (causing more than 50% infection) while B<sub>7</sub> was least virulent (causing 5—10% infection). Injection of spore suspension into spikelets by means of hypodermic syringe resulted in higher percentage of infection than dipping method, while results with spraying method was rather poor. The percentage of infection increased with the increase of concentration of spore suspension, which was kept within the range of 600—9600 conidia per cubic millimeter. Ergot produced by strains of *Claviceps microcephala* on rye varieties were 34 times in weight as compared with those produced in nature on original host plants (*C. epigeios*). Strains B<sub>1</sub> and B<sub>5</sub> gave rise to ergots on different rye varieties containing 0.22—0.40% total alkaloids calculated as ergotoxine. The alkaloid content was much higher than that of the original rye ergots (0.06%) collected from different localities of North and Northeastern China. The figure also exceeds the required level for standard ergot (0.2% total alkaloid) as was listed in Chinese Pharmacopoeia. Strain B<sub>5</sub> had a higher capability for alkaloid production than B<sub>1</sub>. Alkaloid contents of ergot also differed considerably with different rye varieties, and Chamoshih appeared to be the better variety than either Kongtzeling or Pinglu.

Keywords:

收稿日期 1958-09-09 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者:

扩展功能

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