学术学位论文封面





**博/硕 士 学 位 论 文**

根据申请学位类型选博士或硕士学位论文

论文题目

二号黑体，居中

培养单位 （学院全称）

学科专业 （与招生专业一致）

论文作者

指导教师 （导师姓名 职称）

合作指导教师

年 月

月份按照学位会召开月份填写

专业学位论文封面





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根据申请学位类型选博士或硕士学位论文

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二号黑体，居中

培养单位 （学院全称）

专业学位类别

专业学位领域 （限农业和工程类填写）

论文作者

指导教师

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年 月

月份按照学位会召开月份填写

Dissertation Submitted to Northwest A&F University

 in Partial Fulfillment of the Requirements

for the Degree of

Doctor/Master of

根据申请类型选Doctor或Master。[Doctor of 后一律填Philosophy](http://www.baidu.com/link?url=_wdksMdY60xlmhqOxftD5RZ04vuaFr-C2NORYIhMvfi7swsO9fyyyiLF4yp6lYV_5HBgGekZgL9ZlXbciAcF05yyBeF53h7n3N597AKa1gHQ6oErYYkz1RuZQ7niOeSL)；Master Of后填授予学位门类，例如：Engineering；Agriculture；Managements等。

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Supervisor:

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for the Professional Degree of

Doctor/Master of

根据申请类型选Doctor或Master。 Of后填专业学位类别，例如： Veterinary Medicine，Agricultural等.

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分类号： 学校代码：10712

UDC： 研究生学号：

密级：

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# 摘要

黑体三号，居中，段前

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宋体五号，居中

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小四号宋体字书写，固定值20磅，两端对齐

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**关键词：**　　　　；　　　　；　　　　；

五号宋体

五号宋体（加粗）

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# ABSTRACT

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五号字，居中

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小四号Times New Roman字体书写，固定值20磅，两端对齐

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**Key Words:**　　　　；　　　　；　　　　；　　　　；

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黑体小四号字，固定行距20磅，段前空6磅，段后0磅

黑体三号，居中，固定行距20磅，段前空2行，段后空1行

[摘要 I](#_Toc4428251)

[ABSTRACT II](#_Toc4428252)

[第一章 XXXXX 1](#_Toc4428253)

[1.1 XXXXX 1](#_Toc4428254)

[1.1.3 XXXXX 1](#_Toc4428255)

[第二章 XXXXX 3](#_Toc4428256)

[2.1 XXXXX 3](#_Toc4428257)

[2.1.1 XXXXX 3](#_Toc4428258)

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宋体小四号字，固定行距20磅，段前，段后0磅

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[第六章 XXXX 5](#_Toc4428260)

[参考文献 7](#_Toc4428261)

[附录 9](#_Toc4428262)

[致谢 11](#_Toc4428263)

[个人简历 13](#_Toc4428264)

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# 第一章 XXXXX

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## 1.1 XXXXX

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### 1.1.3 XXXXX

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宋体小四号字（英文用Times New Roman体），固定行距20磅

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表2-1培养基种类对“日本红”菊花茎尖培养成活率和再生率的影响

Table 2-1 Effects of different media on survival and shoot regrowth rates of shoot tips of *Chrysanthemum morifolium* ‘Japanese Red’

|  |  |  |
| --- | --- | --- |
| 培养基种类\*Types of medium\* | 成活率 (%)Survival (%) | 再生率 (%)Shoot regeneration (%) |
| SRM 1 | 94.6 ± 5.2a | 61.7 ± 2.1a |
| SRM2 | 80.8 ± 4.4b | 45.4 ± 2.5b |
| SRM3 | 85.8 ± 4.1b | 50.0 ± 2.6b |

表中数据为平均值±标准误。同处理中带不同字母的数据表示差异显著(*P*<0.05)。显著性检验方法为Student’s *t*-test.

\*培养基的成分分别是：SRM 1= MS + 1.0 mg/LBA + 2.0 mg/LNAA; SRM 2= MS + 1.0 mg/LBA + 0.1 mg/LNAA; SRM 3= MS + 0.05 mg/LGA3.

Data were presented as means ± SE and with different letters in the same column indicate significant difference at *P* < 0.05 analyzed by Student’s *t*-test.

\*SRM1=MS + 1.0 mg/L BA + 2.0 mg/L NAA; SRM2=MS + 1.0 mg/L BA + 0.1 mg/L NAA; SRM3= MS + 0.05 mg/L GA3.

表为5号字，行距为固定值18磅，中英文对照

# 第二章 XXXXX

## 2.1 XXXXX

### 2.1.1 XXXXX

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图2-1 “Gala”苹果叶片不定芽再生

用于不定芽再生4周苗龄的试管苗 (a)；叶片外殖体 (b)；培养11天后形成的不定芽突起 (c)；c图中不定芽突起的放大图 (d)；发育完整的不定芽 (e)；不定芽萌发后形成的茎 (f)。

a图的比例尺为1.0 cm；d和f图的比例尺为1.0 mm；c、d和e图的比例尺为0.1 mm。

Figure 2-1. Adventitious shoot regeneration from leaf segments of apple ‘Gala’.

A 4-wk-old stock shoots (a). A leaf segment with four transverse cuts across the midvein on the abaxial side, used for shoot regeneration (b). Small meristemoids (Me) formed from callus after 11 d of culture (c). Magnified view of the rectangular area in (c), showing meristems (d). An adventitious bud with leaf primordia after 16 d of culture (e). Adventitious shoots regenerated from leaf segments after 11 wk of culture.

Bars in a =1.0 cm; in b and f =1.0 mm, and in c, d and e=0.1 mm.

图注为5号字，行距为固定值18磅，中英文对照

****

图2-2.PEG诱导的干旱胁迫对‘解百纳’葡萄 (*Vitis vinifera*）试管苗感染葡萄卷叶病毒-3和无毒苗营养生长的影响。

(A) 茎鲜重；(B) 茎干重；(C) 根鲜重；(D) 根干重。图中柱为平均数±标准误。同参数间带不同字母的数据表示差异显著 (*P*<0.05). 显著性检验方法用Student’s *t*-test。

Figure 2-2. Effects of PEG-induced drought stress on vegetative growth of *in vitro* shoots of ‘Cabernet Sauvignon’ grapevine (*Vitis vinifera*) infected with and without grapevine leafroll virus-3 (GLRaV-3).

(A) Fresh weight of shoots. (B) Dry weight of shoots. (C) Fresh weight of roots. (D) Dry weight of roots. Data were presented as means ± SE a nd with different letters within the same parameter are significantly different at *P* < 0.05 analyzed by Student’s *t*-test.

图注为5号字，行距为固定值18磅，中英文对照

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[Joshi](https://pubmed.ncbi.nlm.nih.gov/?term=Joshi+RK&cauthor_id=32864285) RK, [Bharat](https://pubmed.ncbi.nlm.nih.gov/?term=Bharat+SS&cauthor_id=32864285) SS, [Rukmini M](https://pubmed.ncbi.nlm.nih.gov/?term=Mishra+R&cauthor_id=32864285)R. 2022. Engineering drought tolerance in plants through CRISPR/Cas genome editing. Plant Biotechnology Journal[J], 10 (9): 400. doi: 10.1007/s13205-020-02390-3.

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