

杂交元胡新品种栽培技术的研究

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摘要 对杂交元胡新品种的一些栽培措施进行了研究。新品种的种植密度:小块茎(2.3~2.8g/个)作种,以繁殖为目的,密度50~75个/m²,以生产为目的,100个/m²。大中小块茎作种,生产上可用75个/m²的密度;种植深度10cm左右时繁殖系数大产量高;杂交元胡在北方种植必须灌水。采用土壤湿度计负压值作为指导灌溉信号,综合考虑提高繁殖系数,节约用水,灌水开始点以26.7kPa为佳,超过40kPa浇水严重减产。采用平畦、覆盖稻草等措施,皮管浇灌与滴灌的产量无显著差异。

关键词 杂交元胡 种植密度 种植深度 灌溉方式 灌水开始点

从正品浙江元胡 *Corydalis yanhusuo* W.T. Wang 和野生齿瓣元胡 *C. remota* Fisch ex Maxim 的杂交后代中,我们选育出了适于北方种植的杂交元胡新品种[徐昭玺.中草药,1993,24(11):593]。该品种块茎大,产量高,为加速推广种植新品种,我们对其配套栽培技术措施进行了研究。获得了新品种适宜的种植密度、深度及灌水保墒方法。

1 实验材料和方法

1.1 材料:为杂交元胡的杂交9号。试验地设在药植所内,土地耕翻耙细后,作成宽1m,长12m的高畦,浇灌采用平畦。元胡5月底收获后,用细砂土埋藏过夏,9月底栽种,种后覆盖稻草保墒。种植密度及深度试验采用滴灌浇水。

1.2 种植密度试验:试验设25、50、75、100个/m²4个处理,小区面积1m²,前3处理种5行,第4处理种7行。

1.3 种植深度试验:试验设4、7、10、13cm 4个深度处理,3次重复,小区面积1m²种50个块茎。

1.4 灌溉方式及灌水开始点试验:灌溉方式设滴灌、浇灌、不灌(对照)3个处理。滴灌灌水开始点设4个处理,即开始灌水时,土壤湿度计负压值分别为21.3、26.7、33.3、40kPa,浇灌为26.7kPa。小区1m²种块茎75个。

灌溉设置:每畦铺设毛管2根,其上安微管滴头,流量15L/h,滴头间距35cm,长度20~40cm,从入水端开始逐渐缩短。总管出水口安装流量表,计量每次灌水量。土壤含水量用土壤湿度计测定。每天记录土壤湿度计负压值,并用取土烘干法作出土壤水分特征曲线,通过实际观察的土壤湿度计负压值和土壤水分特征曲线求得各处理土壤含水量。

$$\text{繁殖系数} = \frac{\text{收获块茎个数}}{\text{栽种块茎个数}}$$

2 结果与分析

2.1 种植密度试验:试验结果如表1。随着种植密度的增加,平均单块茎重及繁殖系数减少,但产量增加。因此,以小块茎作种时,以繁殖为目的,可采用50~75个/m²的密度,以生产为目的,则用100个/m²的密度;用大中等块茎作种,在生产上可用75个/m²的密度。

2.2 种植深度试验:元胡块茎的形成有2条途径:由地下茎节膨大而成的称子元胡;由种块茎内部形成的称母元胡。其中形成子元胡的数量和大小与种植深度有密切关系。

1989年深度试验结果如表2。种植深度对繁殖系数的影响F测验表明达到显著水平。种

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表1 杂交元胡种植密度试验结果

作种块茎	小块茎 (2.3~2.8g/个)				中等块茎 (4.6g/个)			大块茎 (6.7g/个)	
	25	50	75	100	50	75	90	50	75
种植密度(个/m ²)	25	50	75	100	50	75	90	50	75
平均单块茎重(g)	2.8	2.6	2.3	2.2	3.2	3.2	3.1	3.3	3.4
繁殖系数	4.4	3.8	3.5	3.3	4.7	4.5	3.1	4.4	4.2
折合产量(kg/500m ²)	150	246	295	349	337	472	440	355	403

植深度10cm的繁殖系数显著高于4cm和7cm下的繁殖系数。但种植深度对平均单块茎重的影响不显著。因此4cm和10cm折合100m²产量显著差异是由繁殖系数不同引起的。但是,种植深度不是无限的。1990年7、10、13cm 3个种植深度结果表明13cm深度时元胡的繁殖系数及产量均较10cm深度为低。尤以小元胡作种时结果明显。种植深度10cm时68.67kg/100m², 13cm时 59.82kg/100m²。出苗动态调查表明种植太深影响出苗。

2.3 灌溉方式及灌水开始点试验

2.3.1 不同灌溉处理对土壤含水量及用水量的影响。结果见表3。随着灌水开始点——土壤湿度计负压值的升高土壤含水量下降,生长季灌水次数及用水量相应减少。相同负压值下开始灌水,土壤含水量滴灌和皮管浇灌无差异。

2.3.2 灌溉方式与灌水开始点对杂交元胡生长的影响试验结果如表4。从表中可以看出杂交元胡新品种在北方种植不灌水处理的繁殖系数,平均单块茎重,产量均较灌水处理的低得多,因此必须浇水,相同负压值下开始浇水滴灌与浇灌的繁殖系数、产量差异不明显。结合表3结果,综合考虑节约用水、

表2 杂交元胡种植深度试验结果

(1989年)

种植深度(cm)		繁殖	平均单块	折合产量
及重复		系数	茎重(g)	kg/100m ²
4	1	4.5	3.5	72.71
	2	4.8	3.6	77.51
	3	4.5	3.6	75.56
	平均	4.6	3.6	75.26
7	1	4.9	3.5	74.51
	2	4.8	3.4	79.76
	3	5.0	3.4	75.86
	平均	4.9	3.4	76.76
10	1	5.3	3.3	78.86
	2	6.3	2.8	80.76
	3	5.3	3.3	79.16
	平均	5.6	3.1	79.46

表3 不同灌溉处理对土壤含水量及用水量的影响

处理	灌溉方式	滴 灌				浇灌
	灌水时负压值kPa	21.3	26.7	33.3	40.0	26.7
土壤含	重量百分数	19.7	18.9	16.7	15.8	18.8
水量(%)	相对含水量	78.8	75.6	66.8	63.1	75.2
生长季灌	灌水次数	7	5	4	3	5
水情况	灌水量(kg/m ²)	140	100	80	60	100

表4 不同灌水处理对杂交元胡生长的影响

灌溉方式	滴		灌		浇灌	不灌
灌水开始点(kPa)	21.3	26.7	33.3	40.0	26.7 (CK)	
繁殖系数	2.1	2.2	2.1	1.9	2.0	1.7
平均单块茎重(g)	4.0	3.4	3.4	2.1	3.6	1.8
折合产量(kg/100m ²)	69.72	62.52	59.52	33.73	59.67	26.99
差异显著性(5%)	a	ab	b	c	b	d

繁殖系数、产量等因素,灌水开始点以26.7kPa左右为好,超过40kPa才浇水则严重减产。

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Effects of Ground Beetle on Blood Rheology of Rats

Zhou Chunfeng, Lai Meng, Wang Xiuhua, et al

Extract of Ground Beetle was found to affect rat rheology, when given orally to rats for 10 consecutive days, it resulted in the lowering of packed corpuscular volume, high and low whole blood shear viscosity, RBC aggregation and rigidity indices and sedimentation rate, but the constant of SR equation was raised and without effect on plasma viscosity and fibrinogen content. These results suggested that the effect of ground beetle extract is by way of its action on RBC.

(Original article on page 28)

Morphological and Histological Studies on Folium and Stem of *Potentilla*

Yang Bin and Yue Chongxi

Morphological and histological characters of the leaves and stems of 6 species of *Potentilla* (*Potentilla fragarioides*, *P. discolor*, *P. chinensis*, *P. 'kleiniana*, *P. freyniana*, *P. anserina*) are described and compared for the first time. Some Characters such as the form of glandular trichomes on stems; the form of trichomes on leaves and stems; the stomatal index of lower surface of leaves and the palisade ratio play important roles in the differentiation among the 6 species. The glandular trichome is reported for the first time.

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Effect of K_{La}° on Ginseng (*Panax ginseng*) Cell Culture

Ding Jiayi, Cai Jun, Zhao Chongde, et al

Cell culture of Ginseng (*Panax ginseng*) was conducted under different K_{La}° , with other conditions kept constant. Results showed that the best range of K_{La}° for Ginseng cell culture was $18 \sim 27 h^{-1}$.

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Study on the Cultural Practice of New Hybrid Yuanhu

Xu Zhaoxi, Li Ailian, and Wei Jianhe

Some cultural practices of a new hybrid yuanhu were reported. The planting density of the new variety was, using small seed tubers (2.8g/Per tuber), $50 \sim 75$ tubers/ m^2 for reproduction purpose, 100 tubers/ m^2 for high yield. 75 tubers/ m^2 was a suitable density when large or middle seed tubers was used. High reproduction coefficient and yield were obtained when the planting depth was 10cm. It was necessary to irrigate the hybrid yuanhu in North China. Adopting the negative pressure value of soil humidometer as the guide of beginning to irrigate and to obtain high reproduction coefficient and to save water, 26.7kPa would be adopted as the initial point of irrigation, exceeding 40.0 kPa led to a serious reduction of yield. The difference of yield between roller roller irrigation and drip irrigation treatment was not obvious, when planting with covering straw in level bed.

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