

多效唑 (PP₃₃₃) 对马铃薯茎叶生长和光合产物的影响

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马铃薯是我国重要粮菜兼用作物。随着施肥水平的提高和高产优质品种的推广, 营养生长过旺和倒伏程度日趋严重, 影响块茎的产量和品质。1986年春, 我们用本所合成的多效唑 (PP₃₃₃) 进行抑制马铃薯茎叶生长、促进光合产物向块茎转移的试验。

供试品种为克新1号。2月14日播种并覆盖地膜, 行株距为66×20cm, 3月29日齐苗后揭去地膜。4月22日和4月29日两次叶面喷施多效唑。试验结果表明, 在300ppm浓度范围内, 多效唑浓度愈大, 抑制马铃薯茎叶生长作用越强。4月22日的处理于5月12日调查, 喷施100、200、300ppm多效唑的植株比未喷植株分别矮15%、18.6%、29.5%。

多效唑促使光合产物向块茎转移的效果明显。4月22日的处理于5月12日调查,

喷施100ppm和未喷植株的茎叶/块茎重量比分别为0.68和1.84, 单株平均块茎产量分别为236克和154克, 早期产量增产53%; 4月29日的处理于5月24日调查, 喷施多效唑50、100、150ppm, B₂3000ppm和对照植株的茎叶/块茎重量比分别为0.64、0.57、0.57、0.68和0.73, 其单株平均块茎重量为295克、325克、305克、270克和270克。其中100ppm较对照增产20%。通过上述两次处理的调查发现, 早处理能有效地增加早期产量。马铃薯喷施PP₃₃₃后, 叶色浓绿, 叶面积稍有减小, 说明叶绿素含量增加, 提高了光合效率。施用的适宜浓度以100ppm最好。施用的适宜时间、每亩适宜用量等, 待后续报。

本文经蒋先明教授审阅, 特此致谢。

2. Whether early maturing potato cultivars were virus-free or not, there was little difference in the plant height, but the plant height of middle maturing virus-free cultivars was higher than that of the cultivars infected. The fresh weight of stem, leaf and tuber of both early and middle maturing virus-free cultivars increased significantly.

3. The early maturing virus-free cultivars were more vigorous than the cultivars infected during the late growth period. The growth peak of middle maturing virus-free cultivars was later than that of the cultivars infected, and the virus-free cultivars grew better than the cultivars infected.

4. The equilibrium stage of early maturing virus-free cultivars was earlier than that of the cultivars infected; therefore they can be supplied for the market early. The equilibrium stage of middle maturing virus-free cultivars was later, so higher yield could be achieved if they were harvested late.