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研究论文

脉冲核磁共振仪(Pulsed NMR)对作物种子含油量的快速测定

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摘要 运用三种不同方法来验证脉冲 NMR(Minispec PC 20)对作物种子含油量测定的准确性。样品油分的变动范围为3%至55%。三个试验中理论含油量与脉冲 NMR 实测含油量十分接近,相关系数都在0.997以上;对相同材料进行连续35天的7次测定,显示了仪器读数的稳定性;在取数延迟时间为3500微秒时,自然干燥,浸水8小时和在60℃烘箱中充分烤干的种子,测得的油分含量差异不显著,说明在一般情况下,种子水分含量对油分测定无明显干扰作用。

关键词 脉冲核磁共振 含油量 玉米种子

分类号

Rapid Determination of Oil Content of Crop Seeds by Pulsed NMR

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Abstract Three experiments designed to assess the accuracy of pulsed nuclear magneticspectroscopy(minispec PC20)have been carried out.Samples with known oil contentfrom 3% to 55%,made by mixing corn oil with liped-free corn meal,by mixing corn oilwith carbon tetrachioride,and by gravimetric analyses were determined by pulsed NMR.High correlation between NMR readouts and calculated oil content were found(r>0.997).Seven repeated determinations of the same set of samples during 35 days indicatedthe stability of NMR mea...

Key words Pulsed NMR Oil content Corn seeds

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