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: 以陕西临潼石榴为研究对象, 研究套袋方式(纸袋、膜袋)对石榴生长规律、石榴品质及安全性的影响. 结果表明, 套袋栽培技术能明显改善石榴果实的色泽及光滑度, 减少裂果率, 增加单果重量; 套袋石榴果实中还原糖含量明显低于对照组(未套袋)石榴果实, 而可滴定酸含量略高于对照组果实; 套袋石榴果实中重金属(Pb、As、Hg)含量、农药残留量(氯氰聚酯)明显低于对照组(未套袋)石榴果实. 石榴套袋栽培技术是生产优质石榴, 提高石榴生产效益的重要措施.

: 套袋; 石榴; 品质; 安全性

: TS255. 3

: A

(*Punica granatum*)

2008—2009

1990

55 000 m²,

500

450 ~

480 m,

13.5 °C,

553.3

mm,

219 d.

Wu

(200 mm),

[1]

(200 mm × 300 mm),

; NaOH, 3, 5-

[2]

7

7230G

(K, Ca, Mg, Cu, Na, Pb, Cr)

; ZDS-10

Cr, Pb

[3-4]

; DT-615

1. 2

5

1/3

1/3

1/3

(),

6

,9 ,9 12 -9 16
 ,9 25 -9 30

ZDS-10

DT-615

×100% ;
 GB/T 8858—1988 ;
 GB/T 12293—1990 ;
 DNS ; Pb、As、Hg , NY
 609—2002 ;
 GB16333—1996

10

11 ()
 $v = (\pi/6) ab^2$
 , ,a ,b . 1 1.

Tab.1 Average temperature, humidity and light intensity in bag

	/°C	/%	/lx
	29.21	57.83	46
	30.32	94.10	73 000
	25.68	45.36	90 500

1

Fig.1 Effect of bagging methods on pomegranate growth regularity

Tab.2 Effect of bagging methods on pomegranate fruit appearance quality

	/g	/%	/%
	313.16	80	10
	273.60	65	14
	182.47	85	21

: 2008,2009

10

100

1/4

3.

3

Tab.3 Effect of bagging methods on pomegranate fruit internal quality influence

	/ (g·kg ⁻¹)	/ (mg·mL ⁻¹)	/%	
	14.106	134.9	84	85
	13.809	146.9	78	83
	12.327	156.2	74	83

2.000 g

2 mL HNO₃ (86 °C) 1 h,

1 mL , 2 mL ,

Pb、As ,

Hg . 4.

4

Tab.4 Effect of bagging methods on heavy metal content in pomegranate fruit

	w(Pb)/ (mg·kg ⁻¹)	w(Hg)/ (mg·kg ⁻¹)	w(As)/ (mg·kg ⁻¹)
	0.031 2	0.001 2	—
	0.035 7	0.003 1	—
	0.061 6	0.006 6	0.023 1
	≤0.2	≤0.5	*
	≤0.05	≤0.2	≤0.01

: “—” , “*” .

20 g 250 mL ,
 100 mL - (4:1) , () ,
 30 min , 20 mL .
 , 500 mL , 20 mL 2% ,
 , , (94.1%)
 250 mL , (57.83%) ,
 5 mL. 2 cm × 25 cm 9 .
 , 1
 cm ,3 cm ,2 cm **2.2**
 , 10 mL , 2 ,
 , , 5 mL , ,
 . 5. ,
 5 .

Tab.5 Effect of bagging methods on pesticide residues in pomegranate fruit

$w(\quad)/(\text{mg}\cdot\text{kg}^{-1})$
1.2×10^{-3}
1.1×10^{-3}
6.0×10^{-3}
≤ 1.0

2

2.1

1 , , ,
 、 , ; (1) ,
 , **2.3**
 1 , 、 ,
 () . ()
 , 9 ; ,
 , 9 ; :1)
 , 9 (,
 ,) . : 8 、9 2)
 , ,
 () ,
 , [5] , [6] . 3)

3

；
 ；
 [7] .
 ()
 ；
 [8] .
 ；
 ；
 ；

2.4

2.4.1 重金属含量的影响

4
 (Pb、Hg、As)

$$J_m = V_0 C_L$$

$$J_m() V_0()$$

$$V_0()$$
 [9-10]

2.4.2 农药残留的影响

2008
 ；
 ；
 5
 ；
 4 5
 ；

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Microwave-assisted Technology for Extracting Polysaccharides from Root of *Agaricus Bisporus* Stipe

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Abstract: The microwave-assisted extraction technology was used to increase the extraction ratio of polysaccharides from the root of *Agaricus bisporus* stipe. The influence of factors on the extraction of the polysaccharides was studied by single factor test and orthogonal experiment design methods, including microwave power, lid-liquid ratio, radiation time and extraction times. Results showed that the optimum conditions were obtained as follows: the microwave power 60%, the ratio of material to solvent 1:12, the time for microwave extraction 6 minute and extraction times 4. Under the technological conditions, the content of polysaccharides was 1.64%.

Key words: root of *agaricus bisporus* stipe; polysaccharides; microwave-assisted extraction; orthogonal experiment

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Effect of Type of Bagging on Quality and Safety of Pomegranate

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Abstract: The aim was to study the effect of bagging methods (paper bag and plastic bag) on the growth rhythm, fruit quality and safety of pomegranate from Lintong Shaanxi. The results showed that, bagging cultivation technique could improve color and luster of pomegranate greatly and reduce fruit cracking rate. Reducing sugar in bagging fruits was less than the controls (no bagging), but the contents of titratable acid were higher than the controls. The contents of heavy metals (Pb, As and Hg) and pesticide residue (cypermethrin) in bagging fruits were obviously lower than the controls (no bagging). Bagging cultivation technique was an important measure for producing high quality pomegranate and increasing productivity of pomegranate.

Key words: bagging; pomegranate; quality; safety

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