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Title: EFFECT OF MULCHING AND PGR ON GROWTH, YIELD AND QUALITY OF STRAWBERRY (*Fragaria ananassa* Duch.) cv. DOUGLAS

Publisher: Birsa Agricultural University, Kanke, Ranchi, Jharkhand

Language: en\_US

Type: Thesis

Pages: 115

Agrotags: null

Keywords: EFFECT OF MULCHING AND PGR ON GROWTH, YIELD AND QUALITY OF STRAWBERRY (*Fragaria ananassa* Duch.) cv. DOUGLAS

**Abstract:** Strawberry (*Fragaria ananassa* Duch.) is the most attractive and favourable soft fruit of the world being rich source of minerals, vitamins A, B, and C and has tantalizing flavour and aroma. The test of fruit mainly depends on three compound viz. sugar, acids and aromatic compound. Botanically the strawberry is aggregate fruit called etaerio of achenes. The edible portion is succulent thalamus which is 98% edible portion. It has a unique place among cultivated berry fruits. Most of strawberry varieties are well adopted to different climatic conditions i.e. Mediterranean, sub tropical and even at high altitude of tropical climates. The crop is gaining popularity in the plateau region of Jharkhand. Specially in Ranchi, due to congenial climatic condition, but there is lack of information regarding its cultivation application of plant growth regulators with use of different mulching material for qualitative and quantitative produce. Mulching material with application of plant growth regulators are known to regulate various vital physiological biochemical processes associated with growth and development of plant and enhance the fruit yield and quality of fruits. The experiment was conducted during 2007-08 and 2008-09 at Horticultural Research Section of the Department of Horticulture, Birsa Agricultural University, Ranchi of Douglus cultivar with nineteen treatments GA3 (25, 50, 100 ppm) with black polyethylene mulch, GA3 (25, 50, 100 ppm) with transparent polyethylene mulch, GA3 (25, 50, 100 ppm) with paddy straw mulch , NAA (10, 20, 40 ppm) with black polyethylene mulch, NAA (10, 20, 40 ppm) with transparent polyethylene mulch, NAA (10, 20, 40 ppm) with paddy straw mulch along with one control) replicated thrice in randomized block design. Result revealed that the different mulching with PGRs application significantly affect the plant growth, yield and quality of fruit. Maximum plant height (23.26 cm), East West spread (32.02 cm) and North South spread (32.08 cm), were recorded with GA3 100 ppm + Black polyethylene application. The minimum days taken to first flowering (62.88 days), First fruit set (4.10 days), Early harvesting (81.61 days) and Colour development (2.08 days), maturity of fruits (19.05 days) was recorded on GA3 100 ppm + Black polyethylene mulching. The maximum fruit length (4.52 cm) and breadth (3.91 cm), Juice (72.21%), TSS (12.71 Brix), acidity (0.71%), Total sugars (7.41%), Reducing sugar (6.25%), Ascorbic acid (63.20 mg/100g fruit), Carbohydrate (8.81%), protein (0.76 g/100g fruit) and phenol (113.35 mg/100g fruit) content were observed with GA3 100ppm + Black polyethylene mulch. Regarding maximum vitamin A (79.83 UI/100g fruit) content recorded with application of NAA 10 ppm + Transparent polyethylene. The maximum self life of fruit under ambient (2.48 days) and refrigerated (3.78 days) condition recorded with the GA3 100 ppm + Black polyethylene mulched. As far as economics associated with the trial is concerned, the treatment GA3 100 ppm and black polyethylene mulch produced maximum net profit (Rs. 10,25,484/ha) and the benefit cost ratio was 1.71 as per the recorded observations. So it can be inferred that significant increase in growth, yield and quality could be obtained by the application of GA3 (100 ppm) with black polyethylene mulch.

**Description:** EFFECT OF MULCHING AND PGR ON GROWTH, YIELD AND QUALITY OF STRAWBERRY (*Fragaria ananassa* Duch.) cv. DOUGLAS

**Subject:** Horticulture

**Theme:** EFFECT OF MULCHING AND PGR ON GROWTH, YIELD AND QUALITY OF STRAWBERRY (*Fragaria ananassa* Duch.) cv. DOUGLAS

**These Type:** Ph.D

**Issue Date:** 2010


**Appears in Collections:** Thesis (/handle/1/93550)

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