

IRRIGATION AND NITROGEN FERTILIZATION STRATEGIES FOR BONTOC PEPPER

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Introduction

Bontoc pepper (*Capsicum annuum* L.) is well-adapted in Ilocos Norte and has a high profit potential like bell pepper and other solanaceous crops such as tomato and eggplant. However, its cultural management is not yet well studied. In fact, there is no existing package of technology that is being followed by the growers except for the experience they have in growing the crop. Farmers apply high rates of fertilizer (584-156-156 kg N-P₂O₅-K₂O ha⁻¹) and irrigate their crop weekly through flooding. This practice normally results in substantial N loss by leaching. N leaching does not only reduce the benefit derived from the application of fertilizer N but may in the long run contaminate the groundwater.

Irrigation requires relatively high investments on equipment, fuel, and labor, but offers potential for increasing farm net income. In addition, frequency and timing of water application provide major impacts on crop yield, operating costs and greatly influence the efficiency of applied fertilizer.

Thus, the nitrogen and water requirements of Bontoc pepper were determined which led to the development of appropriate irrigation and fertilization strategies for farmers to follow in growing the crop.

The Recommended Strategies

Irrigation Strategy

Method	: Furrow method, <i>i.e.</i> , apply irrigation through small trenches or parallel channels running through the crop
Depth	: 30 mm or 300,000 liters of water per hectare every irrigation
Frequency	: every 15 days

Fertilizer Strategy

Recommended Rate	: 140-50-50 kg N-P ₂ O ₅ -K ₂ O ha ⁻¹
1 st application	: 7.14 bags 14-14-14 at 14 days after transplanting (DAT)
2 nd application	: 2 bags 46-0-0 at 35 DAT
3 rd application	: 2 bags 46-0-0 at 65 DAT

Method

- 1st application : Dibble the fertilizer 5 cm away from the base of the newly transplanted seedlings
- 2nd and 3rd application: Sidedress the fertilizer near the base of the plants before irrigation

Benefits/Advantages

- Reduces fertilizer and irrigation inputs which likely reduces the risk of nitrate contamination of groundwater.
- Higher nitrogen use efficiency.
- Higher benefit-cost ratio and lower production cost per kg fruits.