Enhancing Garlic Production in Ilocos Through Adoption of Yield Boosting Technologies

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Abstract

The project aimed to enhance production of garlic in Ilocos through adoption of yield-boosting enhancing technologies. Specifically, it aimed to: 1) evaluate the performance and profitability of garlic cultivars grown twice a year using direct and transplanting method; 2) evaluate the yield and economic performance of garlic cultivars planted at different planting dates; 3) verify and fine tune the gibberellic acid (GA_3) technology during the regular season; and 4) promote community-based organic fertilizer production and utilization.

Two cropping of direct seeded garlic increased production from 3,402 kg/ha during the regular season to 9,300 kg/ha in Year 1 and from 3,622 kg/ha to 6,200 kg/ha in Year 2. This resulted to an increase in net income from PhP104,192 to PhP735,750 in Year 1 and from PhP77,903 to PhP95,750 in Year 2. Transplanting garlic maybe an option but additional associated cost amounting to PhP175,499/ha may limit its adoption by farmers.

At DA-INREC, Batac City, highest yields were obtained in November at 4,387 kg/ha and December at 3,896 kg/ha. In Bacarra, highest yields were noted in November, December and October at 3,631 kg/ha, 3,349 kg/ha and 3,217 kg/ha, respectively. In Pasuquin under upland condition, highest yield was observed in October at 6,755 kg/ha. Consequently, net income increased with planting in October to December, beyond which, either earlier or later, net income decreases.

Application of GA_3 at 36 and 56 DAP resulted to highest yield at 3,659 kg/ha. This consequently resulted to increase in net income at PhP104,823/ha.

Farmers' association is a vehicle of community-based organic fertilizer production and a model to showcase the utilization of organic fertilizer. The sustainable production and utilization of vermicompost intend to improve soil condition and help garlic farmers produce their organic fertilizers and organic pesticides for garlic production.

Rationale

- Ilocos region has the best comparative advantage of producing garlic because of its agro-climatic suitability.
- Filipino consumers prefer garlic produced in the Ilocos due to its pungency, aromatic odor and tangy taste.
- There is downtrend in area planted/harvested from 2,629 hectares to 1,740 has based on statistics.
- Garlic supply is highly dependent on importation, we need to increase production.
- The supplementation of GA3 at 250 ppm sprayed at 36 and 56 DAP late in the afternoon increased bulb size and yield.

Conceptual Framework

Problem — Low yield and insufficient production

Impact — Inadequate supply of garlic

S&T Intervention — Technologies on increasing/enhancing garlic production

Components

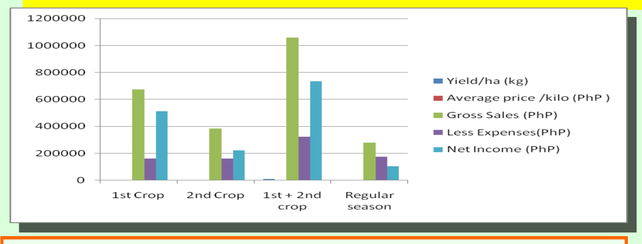
- Two cropping of garlic per year
- Monthly planting of garlic culti-
- Verification/fine tuning of the GA3 Technology
- Community-based organic fertilizer production in support to the garlic industry

Expected Output

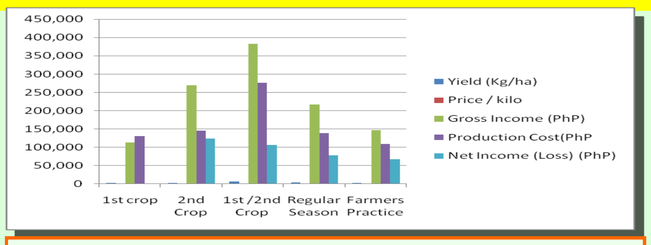
- Increased annual production through two croppings of garlic per year.
- Recommend the best time to plant garlic using the appropriate cultivars
- Verified and fine-tuned the gibberellic acid technology
- Vermicompost/organic fertilizers on garlic production

Potential Outcome — Assessment of different technologies for economic performance

Research Highlights

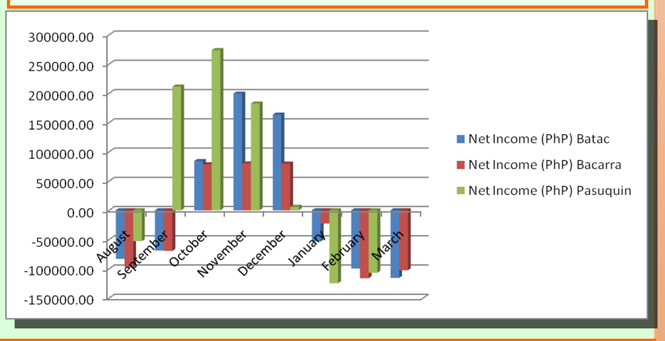


Production cost and income/ha. of di-



Production cost and income/ha of direct seeded, Year 2.

Yield of garlic at different planting dates



Income for garlic production at different planting dates

Organic fertilizer production and utilization to help boost garlic produc-

Garlic production with GA3 application

Conclusion and Recommendation

- **Two cropping of garlic is possible when planted as direct seeded on Sept 15 and December or early January for the second crop in selected upland areas of Pasuquin with available water for irrigation.**
- **The best time to plant garlic in Pasuquin is on October while in Batac and Bacarra during the months of November and December. The best garlic cultivar for planting in Ilocos is Batanes White.**
- **The application of GA3 at 250 ppm at 36 and 56 DAP increased garlic production, and**
- **Sustainable production and utilization of vermicompost improves soil condition which is very important to soil nutrition and can help garlic farmers produce their organic fertilizers and organic pesticides.**