Volume 1, Issue 6, September 2023
ISSN (E): 2938-3781

Web of Agriculture: Journal of Agriculture and Biological Sciences
webofjournals.com/index.php/8

Effect of Feeding Criteria on Growth, Development and Productivity of Early Ripening Potato Varieties

Yuldoshev Ma'rufjon Shukhrat ugli
Kholmatov Abduvohid Toshmurod ugli
Turopova Gulbahor Umbar qizi
Graduate Students of the Termiz Institute of Agrotechnologies and Innovative Development

Abstract:
The effect of feeding criteria on the growth, development, and productivity of early ripening potato varieties is an important aspect of potato cultivation that can significantly impact yield and quality. Different feeding criteria refer to the selection of fertilization methods, nutrient management practices, and timing of nutrient application.

Keywords: Potatoes, early varieties, new varieties, planting methods, productivity and the effect of planting methods on productivity.

Introduction:

Here are some annotations on how feeding criteria can influence these aspects:

- Nutrient Composition: The choice of nutrients and their composition in fertilizers can have a direct impact on potato growth and development. Nitrogen, phosphorus, and potassium are essential macronutrients for potatoes. Properly balanced fertilization can promote healthy plant development, tuber formation, and overall productivity.
- Timing of Nutrient Application: The timing of nutrient application is crucial. Early ripening potato varieties often have a shorter growing season. Applying nutrients at the right developmental stages is critical. Early in the growing season, a balanced supply of nutrients can support vegetative growth, while later in the season, the focus may shift towards promoting tuberization and maturation.
- Rate of Nutrient Application: The rate at which nutrients are applied should be tailored to the specific needs of the potato variety and the soil conditions. Over-fertilization can lead to excessive vegetative growth at the expense of tuber development, while under-fertilization can limit yield potential.
- Organic vs. Inorganic Fertilizers: The choice between organic and inorganic fertilizers can influence the growth and quality of early ripening potatoes. Organic fertilizers release nutrients slowly and improve soil structure over time, while inorganic fertilizers provide quick nutrient availability. Finding the right balance between the two can impact crop health and productivity.
- Nutrient Uptake Efficiency: The efficiency of nutrient uptake by potato plants depends on various factors, including soil health, pH levels, and the presence of competing weeds or diseases. Proper feeding criteria should consider these factors to ensure that nutrients are readily available to the plants.
- Irrigation Management: Along with nutrients, water management plays a vital role in early ripening potato varieties. Over or under-watering can affect nutrient uptake, tuber

Volume 1, Issue 6, September 2023
ISSN (E): 2938-3781

development, and overall plant health. Feeding criteria should consider irrigation practices to optimize growth.

- Micronutrients: Besides the macronutrients, the role of micronutrients (such as iron, manganese, and zinc) should not be overlooked. Micronutrient deficiencies can impair potato growth and yield, so feeding criteria should address these specific needs.
- Soil Testing: Regular soil testing can help in determining the nutrient status of the soil and guide the selection of appropriate feeding criteria. Soil tests can indicate deficiencies or excesses of specific nutrients and guide fertilizer recommendations.
- Disease and Pest Management: Feeding criteria should also consider integrated pest and disease management practices, as these can affect the overall health and productivity of potato plants.
- Environmental Factors: Environmental factors such as temperature, rainfall, and sunlight can influence the effectiveness of feeding criteria. Variations in weather patterns may require adjustments in nutrient application to optimize growth and yield.

The feeding criteria for early ripening potato varieties can have a significant impact on their growth, development, and productivity. Proper nutrition is essential for any crop, and potatoes are no exception. Here are some of the key effects of feeding criteria on early ripening potato varieties:

1. Nutrient Uptake and Growth:

- Adequate feeding, including the right balance of essential nutrients such as nitrogen (N), phosphorus (P), and potassium (K), is crucial for the early growth of potato plants.
- Nitrogen is particularly important for foliage development, while phosphorus supports root and tuber development.
- The feeding criteria should consider the specific nutrient needs of early ripening potato varieties to ensure optimal growth.

2. Tuber Development:

- Early ripening potato varieties typically produce tubers sooner than late-season varieties. Therefore, proper feeding during the tuber initiation and bulking stages is critical.
- High levels of potassium can promote tuber development and help reduce the incidence of common potato defects like hollow heart and internal necrosis.

3. Yield and Productivity:

- Feeding criteria that meet the nutritional demands of the potato plants throughout their growth cycle can significantly impact yield and productivity.
- Proper nutrition can lead to larger and more uniform tubers, ultimately increasing the marketable yield of early ripening varieties.

4. Disease Resistance:

- Well-nourished potato plants are better equipped to resist diseases and pests. Adequate feeding can enhance the plant's natural defense mechanisms.
- Additionally, certain micronutrients, like copper and zinc, can be essential for disease resistance in potatoes.

5. Quality and Taste:

- Feeding criteria can influence the quality and taste of early ripening potato varieties. Proper nutrition can lead to firmer, more flavorful tubers.

Web of Agriculture: Journal of Agriculture and Biological Sciences
webofjournals.com/index.php/8

Volume 1, Issue 6, September 2023
ISSN (E): 2938-3781

- Imbalances or deficiencies in nutrients can result in taste and texture issues.

6. Stress Tolerance:

- Early ripening varieties often face environmental stressors such as drought, heat, or cold. Proper feeding can enhance the plant's ability to withstand these stressors.
- Some micronutrients like boron are essential for stress tolerance in potatoes.

7. Fertilizer Timing and Application:

- The timing and method of fertilizer application are crucial. Split applications of fertilizers during different growth stages may be necessary to meet the changing nutrient requirements of the potato plants.

8. Soil Health:

- Long-term feeding criteria should also take into account soil health. Overreliance on certain nutrients without considering soil nutrient levels can lead to imbalances and environmental issues.

9. Environmental Impact:

- Sustainable feeding criteria that minimize environmental impact should be considered. This includes using nutrient management practices that reduce nutrient runoff and pollution.

10. Monitoring and Adjustments:

- Regular monitoring of plant health and soil nutrient levels is essential to ensure that the feeding criteria are effective. Adjustments may be needed throughout the growing season.

Conclusion

In conclusion, the choice of feeding criteria for early ripening potato varieties is a complex and critical decision that can significantly impact growth, development, and productivity. It requires careful consideration of nutrient composition, timing, rate, and various environmental factors to ensure optimal results. Proper feeding criteria can help achieve higher yields and better-quality potatoes while minimizing environmental impacts.

REFERENCES

1. T.E.Ostanaqulov ,S.A.Yunusov ” Kartoshka yetishtirish” kitobi Agrobank Toshkent-2021.
2. I.Ergashov ,B.Eshonqulov ,O.Taniberdiyev “ Botanik urug’dan kartoshka yetishtirish “maqolasidan.Agro Ilm jurnali(43-44-bet) 1[29]son.2014 yil.
3. X.Xonqulov “Kartoshka tugunaklari va o’simligiga o’stiruvchi moddalarni qo’llash” maqolasidan.Agro Ilm jurnali(42-43-bet) 5[43]2016.
4. B.A.Sulaymonov,X.CH.Bo’riyev,K.S.Sultanov ,Z.A.Abduqayumov, A.I.Nurbekov “Tomorqa sabzavotchiligi “ Toshkent-2014 y 86-93-bet.
5. B. Sulaymonov, H. Bo’riyev, R. A. Nizomov “Tomorqa sabzavotchiligi “ Toshkent-2017 y 12-19 b
6. H. Bo‘riyev, K. Sultonov, Z. Abdiqayumov “Tomorqa sabzavotchiligi “ Toshkent-2014 y 83-90 b

Web of Agriculture: Journal of Agriculture and Biological Sciences
webofjournals.com/index.php/8