

Guiding

Growing winter potatoes using the minimum tillage method in the System of Rice Intensification (SRI) and Minimum Tillage Method (GPM)

Tan Duc Commune – Winter Crop 2017

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1. Planting time: 20 -25/11/2017.

2. Potato varieties

- Use potato varieties grown commonly and having certified variety.
- Choose the same potatoes of no diseases, strained cover, size from 25 – 35 potatoes per 1 kg (diameter of each potato is from 30 - 45 mm), of which 2 - 3 potatoes have germs of 2 – 20 mm. For potatoes of diameter of >50 mm and having lots of germs, before planting for 5 – 7 days, using sharp thin knife to vertically cut them based on the method of cutting into pieces as long as each piece has at least 2 germs (2 pieces are not separated from each other, but still remain for 2 – 3 mm). Disinfect the knife with 900 alcohol or put through fire to avoid transmission of viral disease.
- Quantity of potato varieties: 30-35 kg / sao, depending on the size of potato varieties and density of planting.

3. Collecting straws:

When harvesting summer rice, arrange straw into a pile in the field corner. Amount of straws for 1 sao of potatoes needs 3 - 4 saos of rice for straws.

4. Land preparation:

- Can be applied on many soil types, preferably applied on rice land, active irrigation water, fast drainage if there is heavy rain.
 - Draw water from fields before harvesting 7-10 days.
 - Create small canals of 25 - 30 cm wide around beds, 20-25 cm deep in the inclined direction of the field, each canal is 1.0 to 1.2 m away from each other. Create drainage ditches around the field for drainage.
 - Do not have to make soil on the bed surface.

5. Fertilizers

- Organic manure: 1 sao requires 800-1,000 kg of manure

- Inorganic fertilizers: 10-12 kg of Urea; 20-25 kg Super phosphate); 6-8 kg of potassium. If adding NPK synthetic fertilizer, reduce the amount of single fertilizer respectively. Depending on the fertility of the soil, the characteristics of the variety adjust the fertilizer level accordingly.

- Basal fertilizing: Mix 100% of decomposed animal manure or micro-organic fertilizer or poultry manure with 100% phosphate or synthetic NPK fertilizer and 20% of nitrogen fertilizer for each cavity (if manure is not used then apply along the middle of the bed), then cover with a thin layer of soil; For wet soil, apply around the potato immediately after planting (if planting the potatoes cut into pieces, do not apply nitrogen fertilizer, but apply after planting about 2 weeks).

- Second applying: When the plant is 15-20 cm (15-20 days after planting): Fertilize 40% protein and 50% kali. Mix fertilizer with water to irrigate or fertilize under straw, fertilize between two potato clusters (avoid applying directly to the root), then watering to make the fertilizer to dissolve into the soil.

Then, After 35-40 days, fertilize 40% protein and the remaining 50% kali.

6. Planting techniques

Planting density and distance: Plant 2 rows of 30 - 35 cm from the edge of the bed, 35 - 40 cm from the row; each potato is 30 cm away from each other, equivalent to 5-6 thousand seeds/ha.

Put the potatoes alternative from each other, horizontal and potato bubs upwards. Use powdered soil, humus, rice husk or decomposed animal manure to thinly cover the potatoes; then use straws to cover the entire bed surface for about 7 - 10 cm. Watering wet evenly on the bed surface to moisten straws and soil; if soil moisture is high, no irrigation is required. It is possible to use soil on rice straw to prevent straws from flying if the wind is strong.

7. Caring of:

After 15 - 20 days after planting, add more straw to achieve a thickness of 10 - 12 cm (combined with fertilizer). When covering the straw, pay attention to cut the straw around the potatoes block, avoiding breaking the germ; remove the soil in the groove to cover straw to facilitate drainage.

Regularly monitor the growth situation and pests to take timely measures. In particular, do not allow potatoes when forming (30 days after planting) access to the light.

Watering: Regularly monitor and replenish water when the soil is not moist enough. If the soil is dry, irrigate the flooded ditches $\frac{1}{3}$ - $\frac{2}{3}$ of the bed height. When the bed surface turns dark, drain the water. Watering the grooves 2-3 times / crop, farmers can alternately watering.

- Watering for the first time: After 2-3 days after planting (if soil is moist , farmers do not need to watering for the first time)
- Watering the 2nd time: After 15 - 20 days after planting, combining with fertilizing the first time;
- Watering the 3rd time: 35 - 40 days after planting, combining with fertilizing the second time;;
- Before harvesting 15-20 days, do not water to prevent the potatoes from being rotten.