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Ask PQNK Field Answers 5: Seed Depth, Lentil, Jantar and Kalonji Spacing, Foliar Spray and Mustard Mulch

Answers from Asif Sharif to the fifth set of questions the Ask PQNK assistant could not yet answer: how deep to sow seed, lentil, Jantar and kalonji spacing, foliar spray on wheat, mustard straw as mulch, and sugarcane on leased land

When the assistant does not know, it says so, and the question comes to the author. His answer is then published here, so the next farmer who asks gets it at once.

About This Paper

This is the fifth paper in the Ask PQNK Field Answers series. The questions below reached Ask PQNK, the PQNK assistant on WhatsApp and at pedaver.com/ask, between 21 and 24 November 2026, and it could not answer them from the PQNK library. They were passed to Asif Sharif, Researcher and Developer of PQNK, and his answers are given here, lightly edited. The earlier answers are in KP-226, KP-227, KP-228 and KP-232.

1. How Deep Should Seed Be Sown?

Question: Please recommend the exact seed sowing depth for wheat and barley, and for all the winter grains, pulses and spices. (Asked four times.)

Seed falls into four groups: narrow-leaf crops with big seeds, such as maize; narrow-leaf crops with small seeds, such as wheat and barley; broadleaf crops with big seeds, such as soybean; and broadleaf crops with small seeds, such as rapeseed.

Why do we bury seed in the soil at all? To save it from birds and ants and, most importantly, to give it moisture. A seed needs the right warmth and moisture to germinate. Burying it improves its contact with the soil, so it takes up moisture, and the germination rate improves. In nature, seed is abundant and spread everywhere; the seeds that find the right conditions germinate, and the rest stay dormant or are eaten by many species.

Narrow-leaf seedlings can push through the soil even when the seed is planted deep. Broadleaf seedlings cannot: they come up as a hook that has to straighten to emerge, which needs loose soil around the seed, so broadleaf seed is placed shallow.

In summer, the moisture in the top 2 inches (5 cm) of bare soil dries out quickly, so a shallow seed does not get enough moisture to germinate. In winter, temperatures are low and so is evaporation, so seed can be planted within the top 2 inches (5 cm) of the soil.

On PQNK the soil is covered with organic mulch and stays moist, so the germination rate is higher. The only thing to make sure of is that each seed has room to emerge, and the SIPP and

VIPP planters provide it: they cut a slit through the mulch, place the seed at the right depth, and leave a space for the seedling to come up.

If a seedling does not reach the sunlight soon enough to start photosynthesis, it dies, because every seedling has only a limited store of energy to get there. Remember that a plant takes less than 1 percent of what it needs from the soil; the other 99 percent comes from the atmosphere through photosynthesis. Seed depth and emergence through the mulch are therefore very sensitive, and PQNK provides the most suitable conditions for both.

2. Lentil: Plant-to-Plant Distance

Question: What is the ideal plant-to-plant distance for lentil?

The breeder of the seed recommends the seed-to-seed distance and the total plant population for each variety, because varieties differ in plant structure: some breeders select tall plants and others bushy ones. As a general rule, though, most lentil varieties show good potential at 8 inches (20 cm) from plant to plant, which means about 50,000 plants per acre.

3. Jantar: Seed and Spacing

Question: What should the seed-to-seed and line-to-line distance be for Jantar?

Every seed lot may have a different number of seeds per kilogram, and the planting method decides the seed rate. When seed is broadcast, most of it either stays on the surface, where it does not get the moisture it needs to germinate, or goes too deep to emerge. Mulched beds keep the soil moist, and the SIPP and VIPP planters place each seed at the right depth through a slit in the mulch, with room for the seedling to emerge.

Jantar is grown as a cover crop during the transition, so its seed is mainly broadcast. Because we want a thick net of roots to open the soil pores, and enough foliage to use as mulch and to cover the weeds, a distance of 4 inches by 4 inches (10 cm by 10 cm) between plants is recommended.

4. Kalonji on PQNK

Question: How should kalonji (black seed, Nigella sativa) be grown on PQNK?

Five lines on a 42-inch (107 cm) bed, with 8 inches (20 cm) from plant to plant, are adequate. That makes about 65,000 plants per acre.

5. Wheat: Foliar Spray After Germination

Question: How many days after germination should a foliar spray be given to wheat, and what should be used?

A foliar spray is not a standard recommendation. It is applied only when the plants show a deficiency, during the first one or two crops of the transition. The PQNK library gives a 2% NP solution for this (KP-136).

The spray should fall as fine, mist-like droplets on the leaves, not on the soil surface. Apply it in the evening, so the droplets stay on the leaves for at least 45 minutes and the solution is absorbed rather than evaporating first. Apply it when the canopy has closed, so most of the mist lands on the leaves.

If the plants are not dense enough to catch the mist on their leaves, apply at most 4 kg of NP with the irrigation instead. This may be needed only during the transition, never once the beds have matured.

6. Mustard Straw as Mulch

Question: Can mustard straw be used as dead mulch?

Yes, but keep a close eye on it. Some beetles appear on mustard mulch, and they may eat young seedlings.

7. Sugarcane on Leased Land: What Will It Cost?

Question: I am leasing 6 acres at Rs 30,000 per acre per year in the Jalesar area of Uttar Pradesh and want to plant sugarcane on PQNK. Laser levelling will cost Rs 2,000 per acre. (A farmer asking for a cost estimate per acre.)

The conversion costs about Rs 20,000 per acre in Pakistan. After that, the only costs are the seed, 4,000 buds (setts) per acre, and the labour. That is all.

Question: A new variety, 202001, has come to our area.

We have no information about this variety. Please check with its breeder.

Question: Does Pakistan get less rain than our area?

Rainfall is not uniform: it varies from area to area and from season to season. Mature PQNK beds need no irrigation where rainfall is 16 inches (400 mm) a year or more (KP-226).

Already Answered on pedaver.com

Farmers also asked again about cumin and about the number of Jantar seeds in a kilogram, both answered in KP-232, Ask PQNK Field Answers 4; about moong spacing, answered in KP-227, Ask PQNK Field Answers 2; and about the mulcher, answered in KP-228, Ask PQNK Field Answers 3.

Conclusion

A seed is buried for its moisture, and it must reach the sunlight on its own small store of energy. Under a PQNK mulch the soil stays moist, so what matters is placing each seed at the right depth with room to emerge, which the SIPP and VIPP planters do, and then giving each plant enough space: 8 inches for lentil, 5 lines at 8 inches for kalonji, and 4 by 4 inches for a Jantar cover crop. Sprays and fertiliser belong only to the first crops of the transition, and only when the plants show a need.

PQNK Principle: A seed is buried for moisture, not for depth. Under mulch, give it the right place and room to emerge.

Related PQNK Sources

1. KP-232: Ask PQNK Field Answers 4. https://pedaver.com/papers/ask-pqnk-field-answers-4/

2. KP-226: Ask PQNK Field Answers 1. https://pedaver.com/papers/ask-pqnk-field-answers-1/

3. KP-136: Achieving High Yields in Potato Cultivation within Mature PQNK Systems (2% NP spray, 4 kg NP limit). https://pedaver.com/papers/achieving-high-yields-in-mature-pqnk-potato-systems/

4. KP-140: Wheat Growing Checklist. https://pedaver.com/papers/pqnk-wheat-growing-checklist/

5. PQNK Book, Chapter 23: The Eight-Step Transition Protocol. https://pedaver.com/books/natural-ecosystem-science/

6. Ask PQNK: https://pedaver.com/ask, or on WhatsApp at https://wa.me/923437506442

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