

ARIES FLASH

JANUARY 2025

Navigating January's Challenges with
Precision and Prosperity".

EDITORIAL TEAM

Sundus Kant,
Supriya Kambale,
Swapnil Mali,
Dr. Shama Zaidi.

Aries
2030

Aries Agro Ltd. was founded by Dr. T. B. Mirchandani and Mrs. Bala Mirchandani in 1969. We manufacture micronutrients and other customized nutritional products for plants and animals. We started by manufacturing small-range mineral feed additives for animals and birds and then diversified into mineral additives for agriculture.

In 1975, we diversified into nutrients for plants. We had in-house expertise in the area of mineral nutrition and hence researched compounds that could deliver mineral nutrients to plants more efficiently. This research identified “Metal Chelates”. Through in-house R&D efforts, our Company branched out into Agrochemicals in 1975 with the introduction of Chelated Micronutrients. We pioneered the concept of chelates in India with the introduction of “Agromin”, a micronutrient fertilizer in the year 1975, followed by “Chelamin” in 1976. Agromin (chelated micronutrients) and Chelamin (chelated zinc) are the company’s flagship brands. We are one of the leading manufacturers and sellers of Chelates in the Country.

Our Vision

Empowering farmers everywhere, with our versatile range of agricultural Next Practices, Aries aims to be a global leader in specialised, sustainable & cost effective agricultural inputs.



Our Mission

- Build on our stellar legacy as a market leader & expand our unique range of quality products & solutions globally
- Grow the Aries Family as a highly skilled, trusted, and motivated team with a clear focus on the future and a singular commitment to excellence.
- Continue being recognized and respected as a responsible, robust and profitable business that is Made In India, and proudly serves the farmers of the World.

“FROM SOIL TO SUPERFOOD”

PULSES AND THEIR PROTEIN POTENTIAL”

Pulses constitute an important component of various cropping sequences followed across the country with region-specific variations in preferences and suitability to agro-production situations. Endowed with the virtues of efficient utilization of available limited soil moisture and nutrients and producing beneficial impact on physical and chemical properties of soil, pulses are basic for sustainable crop production systems. These crops not only fix the atmospheric nitrogen for their growth thereby reducing the dependence on external nitrogen sources, but also contribute towards increasing the availability of nitrogen for subsequent crops. They are also rich in complex carbohydrates, micronutrients, protein B vitamins, and minerals like folate, iron, calcium, magnesium, zinc, and potassium. They are considered as “protein for the poor” in the world.



The Multi-Faceted Benefits of Pulses	
Role in Agriculture	Efficient use of soil moisture ; improves physical and chemical properties of soil
Nitrogen Fixation	Fixes atmospheric nitrogen ;reduces reliance on external nitrogen sources, increases soil nitrogen availibility for subsequent crops
Nutritional Benefits	Rich in complex carbohydrates, micronutrients, protein, B-vitamins, and esssential minerals like folate, iron , calcium,magnesium,zinc and potassium
Economic Impact	Known as "protein for the poor" ,pulses provide affordable nutrition globally
Sustainability	Integral to substainable cropping sequences, suited to region -specific agro-production situations

MAJOR CHALLENGES OF GROWING RABI SEASON CROPS

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Drought	Rabi crops depend on residual moisture after the kharif harvest, so they can fail if there isn't enough rainfall during the reaping period
Soil constraint	Rabi crops can be affected by soil hardness, cracking, low organic matter content, and salinity.
Short Sowing Span	Farmers must sow rabi crops on residual moisture, which disappears over time. Delaying sowing can reduce seed germination and lead to seed loss.
Higher temperature	Higher temperature can shorten the growing periods for rabi crops ,negatively impacting yield
Lack of knowledge	Farmers lack knowledge about seed rate, spacing, sowing date, spacing, insect pest disease management and fertilizer dosage.

GROWTH DYNAMICS IN CHICKPEA

Chickpea has played a major role in realization of Pulse Revolution in India making the country near self-sufficient in pulses. Madhya Pradesh, Rajasthan, Maharashtra, Gujarat, Uttar Pradesh, Andhra Pradesh, Karnataka, Chhattisgarh, Bihar and Jharkhand contribute more than 95% to the total chickpea production in the country. India is the largest producer of chickpea with more than 2/3rd share in area and production of chickpea in the world.



CLASSIFICATION

The Indian grams have been classified into two broader groups.

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TYPES

FEATURES

(Desi or Brown Gram (*Cicer arietinum*)

In this group the color of the seed ranges from yellow to dark brown. Seed size is usually small. It is the most widely grown group. Plants are small with good branching ability.

Kabuli or White Gram (*Cicer kabulium*)

In this group the color of the seed is usually white. Grains are bold and attractive. This group's yield potential is poor compared to desi or brown gram. Plants are generally taller than the desi gram and stand more or less erect

CLIMATE

1. A winter season crop but severe cold and frost are injurious to it Frost at the time of flowering is results in the failure of the flowers to develop seeds or in the killing of the seeds inside the pod.
2. It is generally grown under rainfed conditions but gives good returns in irrigated conditions as well.
3. It is best suited to areas having moderate rainfall of 60-90 centimeters per annum. Excessive rains soon after sowing or at flowering and fruiting or hailstorms at ripening cause heavy loss

SOIL

1. Chick pea is grown on a wide range of soils in India
2. In the north, gram is generally grown on moderately heavy soils. In Maharashtra and on the Deccan plateau, black cotton soils are used.
3. The best type of soil for chick pea is one that is well drained and not too heavy.



CROP GROWTH AND DEVELOPMENT

The phenology of most crops can be described using nine phases:

1. Sowing and germination.
2. Germination to emergence.
3. Period of vegetative growth after emergence, called the basic vegetative phase (BVP), during which the plant is unresponsive to photoperiod.
4. photoperiod-induced phase (PIP), which ends at floral initiation.
5. Flower development phase (FDP), which ends at 50% flowering
6. lag phase before commencement of grain-filling
7. linear phase of grain filling.
8. A period between the end of grain-filling and physiological maturity
9. A harvest-ripe period before grain harvest.



FIELD PREPARATION

Chickpeas are highly sensitive to soil aeration. This restriction on cultivation on heavy soils calls for special care in seedbed preparation. A rough seedbed is required for chickpeas. A very fine and compact seedbed is not good for chickpeas. They require a loose, well-aerated seedbed.

Deficiency symptoms in Chickpea



Nitrogen (N) Deficiency: Nitrogen is highly mobile within the growing plant allowing it to remobilize and move to tissues that can use it more effectively. As a result, older leaves tend to exhibit nitrogen deficiency symptoms first. Pink pigmentation develops on the lower part of the stem.



Phosphorus (P) Deficiency:

A purple or reddish color associated with accumulation of sugars is often seen in deficient plants, especially when temperatures are low. At some growth stages, phosphorus deficiency may cause the crop to look darker green.



Potassium (K) Deficiency: K is mobile and readily transferred from old to young leaves when a deficiency occurs. Tips of leaflets show brown necrotic patches and eventually die. Margins and tips of lower leaves show chlorosis.



Sulfur (S) Deficiency

Yield is severely reduced as the deficient plants produce fewer pods and smaller seeds. Younger leaves turn pale green to pale yellow while the lower leaves remain dark green.



Zinc (Zn) Deficiency

The size of leaflets is reduced. Crop maturity gets delayed. The younger leaves become pale green first, then a reddish brown discoloration appears on margins of leaflets and on the lower parts of the stem.

Recognizing Nutrient Deficiencies

Nutrient	Deficiency Symptoms
Nitrogen	Older leaves tend to exhibit nitrogen deficiency symptoms first. Pink pigmentation develops on the lower part of the stem.
Phosphorus	A purple or reddish color associated with accumulation of sugars is often seen
Potassium	Tips of leaflets show brown necrotic patches and eventually die. Margins and tips of lower leaves show chlorosis.
Sulfur	Younger leaves turn pale green to pale yellow while the lower leaves remain dark green.
Zinc	Plants appear stunted and have fewer branches. The size of leaflets is reduced. The younger leaves become pale green first, then a reddish brown discoloration appears on margins of leaflets and on the lower parts of the stem.

Pulses, particularly chickpeas, are indispensable to India's agriculture, nutrition, and economy. They enhance soil health through efficient nitrogen fixation, contribute to sustainable cropping systems, and provide affordable protein-rich nutrition, often referred to as “**protein for the poor.**”

Despite their numerous benefits, cultivating chickpeas and other pulses presents challenges such as drought dependency, soil constraints, and a short sowing window, which require careful management and farmer education. Chickpeas, with their classification into desi and kabuli types, thrive in well-drained soils and moderate rainfall, making them suitable for rainfed and irrigated conditions.

Their growth dynamics, from germination to harvest, underline the importance of specific agronomic practices, including proper seedbed preparation and nutrient management. Recognizing nutrient deficiencies early, such as nitrogen, phosphorus, potassium, sulfur, or zinc, is crucial for optimizing yields and ensuring crop health.

By addressing these challenges through informed agronomic practices and leveraging their multiple benefits, pulses like chickpeas can continue to play a pivotal role in advancing food security, enhancing soil sustainability, and supporting India's agricultural progress.

Rabi Crop Status in India

WHEAT

Growth Stage: Tillering to jointing stage; early-sown varieties may begin heading by late January.		
Challenge	Impact	Solution
Insufficient residual moisture	Affects tillering and growth.	Timely irrigation, particularly at the crown root initiation stage.
Pests and diseases	Aphids and rusts can damage foliage and reduce yield.	Regular monitoring and spraying with recommended pesticides like imidacloprid for aphids.
Unseasonal warm temperatures	Shortens grain-filling duration, reducing yield.	Use heat-tolerant wheat varieties like HD 2967 or HD 3086.

CHICKPEA

Growth Stage: Flowering and pod-setting stage.		
Challenge	Impact	Solution
Pod borer infestation	Causes significant pod damage, reducing yields.	Use pheromone traps and biological control agents like <i>Trichogramma</i> or neem-based sprays.
Nutrient deficiency	Leads to poor pod development and reduced yield.	Foliar spray of nutrients like potassium nitrate or DAP to support pod filling.
Frost damage	Causes flower drop or seed loss in pods.	Protect crops using smoke screens or light irrigation during frosty nights.

MUSTARD / RAPESEED

Growth Stage: Flowering to pod formation stage.		
Challenge	Impact	Solution
Aphid infestation	Reduces flower viability and seed setting.	Spray systemic insecticides like thiamethoxam or adopt neem oil applications.
Soil nutrient depletion	Affects oil content and seed size.	Apply sulfur-based fertilizers (e.g., gypsum) to boost oil content.
Frost and hailstorm damage	Leads to flower and pod loss.	Ensure light irrigation to stabilize soil temperature and reduce frost impact.

BARLEY

Growth Stage: Tillering or jointing stage.		
Challenge	Impact	Solution
Weed competition	Reduces nutrient availability and stunts growth.	Manual weeding or application of herbicides like pendimethalin.
Poor tillering due to drought	Results in reduced plant density and yield.	Provide supplemental irrigation during tillering.
Nutrient imbalance	Affects grain size and quality.	Top-dress with nitrogen fertilizers like urea.

LENTIL(MASOOR)

Growth Stage: Flowering and early pod-setting stage.		
Challenge	Impact	Solution
Rust and powdery mildew	Reduces photosynthesis and plant vigor.	Spray fungicides like mancozeb or sulfur-based products.
Low phosphorus availability	Leads to poor root and pod development.	Apply rock phosphate or SSP (Single Super Phosphate).
Pod borer infestation	Damages flowers and developing pods.	Use biopesticides or neem-based sprays.

PEAS

Growth Stage: Flowering to pod formation stage.		
Challenge	Impact	Solution
Thrips and aphids	Damage flowers and tender pods, reducing yield.	Regular monitoring and spraying of dimethoate or neem oil.
Water stress	Reduces pod size and number.	Provide light but consistent irrigation during flowering.
Powdery mildew	Reduces leaf photosynthesis.	Spray sulfur-based fungicides or potassium bicarbonate.

POTATO

Growth Stage: Tuber bulking stage.		
Challenge	Impact	Solution
Late blight	Can destroy foliage, reducing tuber size and yield.	Use preventive fungicides like mancozeb or metalaxyl.
Uneven irrigation	Causes cracking or misshapen tubers.	Ensure uniform irrigation and avoid waterlogging.
Nutrient deficiencies	Affects tuber quality and storage potential.	Apply potassium-rich fertilizers for tuber bulking.

Weather Challenges for January and Their Solutions		
Weather Challenge	Impact	Solution
Cold Waves	Damages crops like mustard, gram, and wheat during	Use mulching, irrigation, and smoke screens to mitigate frost effects.
Unseasonal Rainfall	Causes waterlogging and fungal diseases in wheat and chickpea.	Ensure proper drainage and use fungicides to control disease spread.
High Day Temperatures	Reduces yield by affecting grain-filling duration, especially in	Adopt heat-tolerant crop varieties and adjust irrigation schedules.

January is a critical month for rabi crops, where effective management of water, nutrients, and pest control is essential to ensure optimal yields. Addressing these challenges with timely solutions helps maximize productivity and sustain the agricultural economy.

The Ultimate Plant Health Enhancer for Chickpea Success



High-density (HD) NPK fertilizers play a crucial role in enhancing the productivity of Rabi crops like chickpea, wheat, lentil, potato, pea, barley, and mustard. NPK 20:20:20 provides balanced nutrients for robust growth, flowering, and fruiting. NPK 11:52:00 ensures a phosphorus-rich start, promoting root development and early establishment. NPK 13:00:45 aids in flowering and fruit setting with a potassium boost, improving quality and stress tolerance. NPK 00:52:34 focuses on phosphorus and potassium, enhancing grain filling and resistance to diseases, while NPK 00:00:50 delivers a pure potassium punch, vital for tuber crops like potato and overall crop resilience. These formulations support precise nutrient management, resulting in better yields and quality during the Rabi season.



HydroPro Gold, a brown liquid rich in amino acids, proteins, and organic nutrients, offers significant benefits for Rabi crops like wheat, pea, potato, lentil, and gram. It enhances nitrogen efficiency, promoting robust growth and better flowering while reducing fruit shedding. Its chelating action improves the uptake of micronutrients, preventing chlorosis and boosting sugar/Brix content and crop weight. Acting as a bio-stimulant, it activates enzymes, ensures better nutrient transport, and supports overall crop health and yield during the Rabi season.



Agripro, a moss-green organic bio-stimulant fertilizer, is a powerhouse of amino acids and chelated micronutrients, aiding Rabi crops like wheat, pea, potato, lentil, and gram in their growth and productivity. It improves nutrient absorption, ensuring a steady supply of essential elements like zinc, iron, and boron, crucial for metabolic processes and chlorophyll production. By accelerating growth functions and enhancing root and shoot development, Agripro boosts crop vigor and resilience, resulting in better flowering, grain filling, and overall yield.



Aries Antox, an organic-certified biostimulant, is a vital aid for Rabi crops like wheat, pea, potato, lentil, and gram during erratic climatic conditions. Enriched with hydrolyzed proteins, crab shell, and seaweed extracts, it enhances root growth, flowering, and plant resilience to temperature and water stress. By improving water retention and alleviating transplanting stress, Antox ensures quick adaptation and uniform growth. It supports photosynthesis, respiration, and transpiration, enabling plants to withstand abiotic stress and maintain healthy growth and productivity.

FIELD TRIALS / DEMONSTRATION

FARMER NAME: PRASAD

DISTRICT: VILUPURAM

STATE :TAMILNADU

CROP :PADDY

ACRE :1 ACRE

RECOMMENDED BY :SIDDARTH J V

HEADQUARTERS :VILUPURAM



Flood-Affected Paddy Field Recovered with Aries Products

Tamil Nadu experienced heavy rains and floods in districts like Cuddalore, Pondicherry, and Villupuram, which caused severe damage to over 40% of paddy crops in the vegetative to panicle initiation stages. Among the affected farmers was Mr. Prasad from Villupuram, who planted the Try 3 paddy on 1 acre. His field was flooded, and the 30-day-old crop was submerged due to continuous rainfall.

Seeking help, Mr. Prasad consulted our Extension Officer, Mr. Siddharth J.V. Upon visiting and analyzing the field, Mr. Siddharth recommended:

Antox (1/4 litre): To relieve stress caused by flooding.

Streptomycin (100 grams): To prevent bacterial disease attacks.

Macrofert 20:20:20 WSF (1/2 kg): To improve the vegetative growth of the crop.

Following these recommendations, the crop showed remarkable recovery, with visible improvement in health and growth. Mr. Prasad expressed his satisfaction and praised the effectiveness of Aries products in reviving his flood-affected field.



ARIES EVERYWHERE



Dr. Rahul sir at the Apple conference in Kashmir where discussions on innovation and growth in the apple industry



Dr. Rahul sir at FAI sharing insights on Harnessing Data and AgTech for Integrated Crop Nutrition.

Dr. Rahul sir discussed on "Digitalization in Agriculture" at Kisan Pune.

ARIES EVERYWHERE



**Mega Farmer Meeting at Hiwarkhed,
Ta. Morshi Dist. Amravati**



**Mega Farmer Meeting at Sellapanpettai Taluka: Budhalur
District: Thanjavur**



Mega Farmer Meeting at Rohatak, Haryana



Mega Farmer Meeting at Bhavnagar, Gujarat.

ARIES GARDEN CARE



Mr. and Mrs. Tiwari Win State Award for Best Terrace Gardening

Mr. Devendra Kumar Tiwari and Mrs. Tiwari were honored with the State-Level Best Terrace Gardening Award at an event organized by Prakruti Ki Aur Sanstha , IGKV University and the Horticulture Department of Raipur. **The award, presented by Chhattisgarh Agriculture Minister Mr. Ramvichar Netam**, recognized their exemplary efforts in terrace gardening.

The Tiwari family credited their success to the consistent use of the Aries Garden Care Range, including Sarvottam for plant growth, Bhusattva for soil health, and Kavachh for plant protection. Their garden stands as a model of sustainable gardening, inspiring participants to adopt eco-friendly practices.



Christmas Day Celebration at Aries Head Office, Mumbai.

