

GLOBAL AEROSPACE SHOWCASE

Aero India 2025 is set to be one of the most anticipated events in the global aerospace and defense calendar. Scheduled to take place in Bengaluru, India, from February 17 to 21, 2025, this international exhibition will bring together the brightest minds, cutting-edge technologies, and the most influential companies in the aerospace and defense sectors. With India emerging as a key player in the global defense and aerospace market, Aero India 2025 promises to be a remarkable platform for collaboration, innovation, and industry networking.

India has consistently made strides in its aerospace and defense capabilities, becoming a significant player in both the manufacturing and technological aspects of the industry. As a result, Aero India has grown to become one of the largest and most important defense exhibitions in Asia. The event not only showcases India's advances in aviation and defense technologies but also reinforces its role as a leading hub for innovation in the sector.

Over the years, India has enhanced its self-reliance in the aerospace and defense industries, with the Make in India initiative playing a pivotal role in boosting domestic production. With major defense companies, both Indian and international, expected to attend Aero India 2025, this year's event will offer an unparalleled opportunity to explore the latest developments in fighter aircraft, drones, air defense systems, military transport, and civil aviation technologies.

The Aero India 2025 exhibition will feature a range of cutting-edge aerospace technologies, including unmanned aerial systems (UAS), next-generation fighter jets, advanced radar systems, defense satellites, and air mobility solutions. As a major platform for defense procurement and business development, the event will facilitate discussions on the growing role of artificial intelligence (AI), cybersecurity, and space technologies in modern warfare and defense strategies. Aero India 2025 will also emphasize the growing focus on sustainability in the aerospace sector, with a special focus on green aviation technologies. The aerospace industry has been at the forefront of developing technologies to reduce carbon emissions, and India has been proactive in encouraging innovations that prioritize eco-friendly and energy-efficient designs. The event is expected to attract participation from several countries, including global aerospace giants such as Lockheed Martin, Boeing, Airbus, Dassault Aviation, and Saab, among others. Key Indian defense players, including HAL (Hindustan Aeronautics Limited), DRDO (Defence Research and Development Organisation), and Bharat Dynamics Limited, will also showcase their products and innovations, solidifying India's position as a growing defense powerhouse. Aero India 2025 will feature numerous industry-specific conferences, seminars, and B2B networking opportunities. These forums will enable industry leaders, government officials, defense experts, and academia to engage in discussions about future trends, emerging technologies, and strategic partnerships. Topics of discussion will likely include defense procurement, cybersecurity, aviation safety, air traffic management, and the development of indigenous aerospace solutions. The event will also provide an opportunity for India to strengthen its bilateral defense and aerospace relations with countries around the world. Aero India is renowned for its spectacular air shows, and Aero India 2025 will be no exception.

World Pulses Day
Pulses: Bringing Diversity to Agri-food Systems

■ DR. PARVEEN KUMAR

No doubt, the green revolution era of the seventies turned the fortunes of the country in so far as food production is concerned. The phenomenal increase in the production of wheat and paddy due to high yielding varieties and use of chemical fertilizers made the country self sufficient and the dependence on imports was reduced to a considerable extent. From a 'begging bowl' to becoming a 'bread basket' green revolution deserves to be credited. Unfortunately, the major focus of green revolution was Paddy and Wheat which resulted in neglect of a vital group of crops i.e pulses. Pulses were pushed to the marginal lands. Over the years, the lack of any substantial policy support also resulted in decrease in area under their cultivation. Ultimately, all this led to an adverse bearing on the productivity and overall production of the pulses. Pulses are still cultivated on the marginal and degraded lands, predominantly under rainfed conditions.

Pulses have the unique distinction of being grown in both 'Kharif' as well as 'Rabi' season and are the leguminous crops harvested for dry grains, yielding seeds of variable size, shape and colour within a pod and used both as food and feed. However, 'Rabi' pulses contribute more than 60 per cent of the total production. Pulses exclude crops harvested green for food which are classified as vegetable crops as well as those crops used mainly for oil extraction and leguminous crops that are used exclusively for sowing purposes. An important source of protein, this group of crops also contributes to soil health and mitigating climate change through their unique nitrogen fixing properties. The major pulses grown and consumed in India include Pigeon Pea (Arhar/Tur/Red Gram), Green Beans (Moong Beans), Bengal Gram (Desi Chick Pea/Desi Chana), Black Matpe (Urad/Mah/Black Gram), Black Eyed Peas (Lobia), Lentils (Masoor), Chick Peas (Kabuli Chana), White Peas (Matar) and Red Kidney Beans (Rajmash).

The country is the largest producer (25% of global production), consumer (27% of world consumption) and importer (14%) of pulses in the world. Pulses account for around 20 per cent of the area under food grains and con-

tribute around 7-10 per cent of the total food grains production in the country. Gram is the most dominant pulse having a share of around 40 per cent in the total production followed by Tur/Arhar at 15 to 20 per cent and Urad/Black Matpe and Moong at around 8-10 per cent each. Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are the top five pulses producing States. Productivity of pulses is 7.6 q/ha. The production of pulse such as Tur, Urad and other lentils across India was estimated to be over 24 million metric tons in 2024. The 2024-25 figures were lower than the average production between 2014-15 and 2024-25 and also lowest of last nine years.

The trend of commercialization of agriculture has further aggravated the status of pulses in the farming system. There is very little value addition for pulses. Pulses are mostly consumed whole or split, apart from desi chickpea which is usually consumed in the form of flour/besan and has growing demand. Most of the processing units are production regions mainly to minimize the transportation cost for procuring raw materials and use traditional technology. However, the growing health consciousness, preference for quality packaged products and shortage of labour drives the processors to use modern technology.

Due to their ability to grow without support of any external inputs, pulses were well integrated into the different farming systems prevalent in diverse agro-climatic zones. They are packed with nutrients and have high protein content. It is estimated that pulses contain 20-25 per cent of protein by weight and have twice the protein available in wheat and three times that is present in rice. This makes them an ideal source of protein particularly in rainfed and resource poor regions where meat and dairy products are not physically or economically accessible to peoples. Pulses are also low in fat and rich in soluble fiber which can lower cholesterol and help in the control of blood sugar. Due to these immense benefits, these are recommended by health organizations for the management of non-communicable diseases like diabetes and heart conditions also. Pulses have also been shown to help combat obesity. These are low in sodium, rich in potas-

sium and good source of iron. Pulses are reported among the top high fibre foods, necessary for supporting digestive health and helping to reduce the risks of cardiovascular diseases. These are also classified as an excellent source of folate, a B-vitamin naturally present in many food essential to the proper functioning of nervous system and especially important during pregnancy to prevent fetal defects. In addition to its nutritional advantage, pulses have low carbon and water footprints which make them an integral part of the sustainable farming system. As per estimates, water footprints for producing one kilogram of meat are five times higher than that of pulses. Further, one kilogram of legume emits 0.5 kilogram in CO 2 equivalent whereas one kilogram of meat produce 9.5 kilogram in CO 2 equivalent. Pulses are highly water efficient: for producing 1 kg of lentils needs 1250 liters, while 1 kg of beef requires 13,000 liters. Intercropping with pulses increases farm biodiversity and creates a more diverse landscape for animals and insects. Pulses are low Glycemic index foods and help to stabilize blood sugar and insulin levels making them suitable for people with diabetes.

Despite all this importance, per capita net availability of pulses in India is not at par with the recommendation. The per capita availability has shown an unusual trend from 51.1 gm/day (1971) to 41.9 gm/day (2013) to 53 gm/day in 2022 and about 47 grams of pulses were available per capita in the country. However, the World Health Organization recommends 80 gm of pulses/day.

World Pulses Day (Feb.10): Recognizing the value of pulses in ensuring nutritional and environmental security the UN General Assembly on 20 December 2013 adopted a resolution (A/RES/68/231) proclaiming 2016 as the International Year of Pulses (IYP). The celebration of the year, led by the Food and Agriculture Organization (FAO) of the United Nations (FAO), increased the public awareness of the nutritional and environmental benefits of pulses as part of sustainable food production. Building on the success of the International Year of Pulses and recognizing their potential to further achieve the 2030 Agenda for

Sustainable Development, with particular relevance to Sustainable Development Goals 1, 2, 3, 5, 8, 12, 13 and 15, Burkina Faso proposed the observance of World Pulses Day. In 2019, the General Assembly proclaimed 10 February as the World Pulses Day vide resolution A/RES/73/251. This year the theme of World Pulses Day is, 'Pulses: Bringing diversity to agri-food systems. The theme highlights the vital role of pulses in promoting diversity-both above and below the ground. Integrating pulses into our diets and agri-food systems, we unlock a more sustainable, nutritious and equitable future.

Pulses have been rightly called as the pulse of the nation. As pulse defines life, pulses ensure nutritional security for the lives. So there is an urgent need to work towards raising its productivity by development of high yielding, climate and disease resilient varieties of pulses and improved production and protection technologies. The ICAR in collaboration with State Agricultural Universities is undertaking basic and strategic research on pulses for developing location-specific high yielding varieties along with package of practices. The National Food Security Mission NFSM-Pulses initiative of the Government of India operational in 28 States and 2 Union Territories including Jammu & Kashmir and Ladakh aims to augment the pulse production in the country. During the period from 2014 to 2023, an impressive 343 high-yielding varieties and hybrids of pulses have been officially recognized for commercial cultivation across the country.

To bring in Self reliance in pulses, in the Union Budget 2025-26, Finance Minister has announced a 6-year mission aimed at achieving self-reliance in pulses, with a special focus on Tur (Pigeon Pea) Urad (Black gram) and Masoor (Lentil). Central agencies such as National Agricultural Cooperative Marketing Federation of India (NAFED) and National Cooperative Consumer's Federation (NCCF) will be prepared to procure these three pulses from farmers who register with the agencies and enter into agreements.

(The writer writes on agriculture and social issues)

Boosting Purple Revolution in J&K

■ DR. BANARSI LAL AND DR. AS CHARAK

India is known for its wide range of medicinal significant plant species. India ranks 8th among the nations with highest level of biodiversity. Union Territory of Jammu and Kashmir is considered as the hub of medicinal plants. Lavender farming has shown promising results as a therapeutic and aromatic plant herb that can contribute significantly in India's economic and medicinal growth. Govt. of India has taken great steps to boost the lavender farming. The purpose of Purple Revolution or Lavender Revolution is to increase the income of farmers and promote lavender cultivation of commercial level. Lavender cultivation is very cost-effective and farmers can fetch more returns by growing this crop. The Purple revolution aims to bring a revolutionary change in the fragrance industry and also generate employment in the rural areas.

Lavender (*Lavandula officinalis*) is a small, aromatic shrub used in the fragrance, especially food and alternative food industries. It belongs to Lamiaceae family. It is also considered as a popular ornamental plant used in various gardening and landscaping and has an arsenal of medicinal and home applications. In India high altitude areas of Jammu and Kashmir, Himachal Pradesh and Uttarakhand are suitable for its cultivation.

In 2016, the Central Government launched the 'Aroma Mission' to boost the plants like lavender that have aromatic and medicinal properties. Lavender oil has demand in the market. Farmers like its farming because of easy practices to grow it and more profits. About 40 litres of lavender oil can be produced from one ha of land. In developing nations such as India growing of lavender crop provides an opportunity for farmers to diversify away from traditional crops that may financially be so profitable, though they are still important for ensuring food security.

Union Territory of Jammu and Kashmir is located within the North-Western Himalayas and is endowed with incredible diversity of medicinal plants. Kashmir is often referred to as a 'Terrestrial Paradise' and is well-known across the globe. One of the main features contributing



to the worldwide reputation of Jammu & Kashmir Union Territory is the rich biodiversity that adorns its captivating landscape. The beautiful Union Territory of Jammu and Kashmir harbors a diversity of medicinal plants that have been used in traditional health care systems for thousands of years. This knowledge of health care is transmitted from generation to generation. There is need of comprehensive documentation, diseases treatment by the medicinal plants and scientific guidelines for the conservation and management of medicinal plants of Jammu and Kashmir. The main ailments that are treated include dermatological, gastrointestinal, dental, wounds, skeletal-muscular, cough and cold, respiratory, genito-urinary, fever, headache, circulatory and ophthalmological. A single plant species may be used to cure various human ailments. The traditional hakims and healers utilize differ-

ent parts of the plants for the remedial measures of different ailments. However, the use of a particular plant part depends on the plant habit and user's needs. The most frequently used plant parts in the preparation of herbal medicines include leaves, seeds, fruits, roots, rhizomes, whole plants, flowers and bark. Different liquids such as water, sugar, honey, juices, tea, edible oil and milk are mixed with plants or plant parts during the preparation of the medicines for the different ailments.

Agriculture is the main source of livelihood for the farmers of Doda district. Doda district of Union Territory of Jammu and Kashmir is known for lavender cultivation. Keeping the profits of this crop in view other districts are also coming forward for its cultivation. Its oil is sold at the rate of about Rs. 10,000 per litre. Lavender water, which separates from lavender

oil, is used to make incense sticks. Hydrosol, which is formed after distillation from the flowers, is used to make soaps and room fresheners. Lavender farming is able to increase the income of farmers and it can strengthen the Start-up programme in India. It has been observed that the climate in certain pockets of J&K is suitable for lavender cultivation as this plant can grow well in cold temperatures and moderate summers. Hundreds of farmers of Doda district in J&K are cultivating lavender and they are fetching good returns by growing this crop. This district has witnessed the 'Purple Revolution' by growing the lavender of commercial level.

Lavender yields essential oil which is widely used in cosmetic and perfumery industry. Linalool and Linalyl acetate are the major constituents of lavender oil. Lavender flowers are grown for their beauty and medicinal properties. Lavender oil has germicidal, medicinal and flavouring properties. Its oil relieves stress/anxiety disorders and thus helps to cure depression. It can also be used in preparing the aromatic candles. Lavender oil has exceptional therapeutic value. It helps to reduce wrinkles and makes skin healthy, fresh and young. The oil extracted from the lavender plant is used in soaps, cosmetics, perfumes, room fresheners, medicines etc. Lavender tea can also be made from lavender flower buds. It can be used in making different kinds of food such as roasted chickens, grilled chickens etc. Its flowers can also be used to make pillows. Lavender often embraces eco-friendly practices, minimizes the environmental impact and develops agro-ecological system. It is drought tolerant and can be grown even in low water conditions. Lavender is helpful to prevent erosion and maintains soil health. It is disease and pest resistant crop. Lavender is instrumental to conserve the biodiversity. Its fields support pollination process and beneficial insects. Commercial lavender farming is helpful to raise the socio-economic status of the rural communities. A Lavender plant bears flowers for 15 years. It needs little care and can be harvested from second year onwards. Well drained loamy soils are required for its cultivation. Lavender is

propagated through seed and cuttings. Seeds are sown in nursery beds in autumn in November-December and for 1 sq.m area, 0.2-2gms of seeds are required at a depth of 1-2 cm. It can also be propagated by the hardwood and softwood cuttings. Softwood cuttings propagate faster and has a higher chances of success. 2-3 weeding are also required during the year in the crop so as to keep it healthy. Plants are transplanted in the month of November-December or in early spring in February-March at a spacing of 75 cmx75 cm with a plant density of 18,000 plants per hectare. Lavender can grow well with an annual rainfall range from 300-1400 mm per year. The crop should be irrigated as per the requirement and should not be over irrigated. Harvesting of flowers is done with a sharp sickle on bright sunny days when about 50-60 per cent of florets are open. We can obtain about 60-70 qtls. of flowers can be obtained per ha after 3rd year of the crop. Plants are harvested in November-December above 10-15 cm of ground. The average per Kanal yield of lavender is 2.5 Kg oil. Oil content varies from 0.4-0.5 per cent. Oil yield is obtained more in higher altitudes as plants flower abundantly in cooler areas. Yield depends on location, management and cultivars. Farmers can fetch more returns by growing it even in monkey prone areas. HIM-Jammu and KVKs of J&K create awareness and impart trainings on lavender farming to the farmers of J&K to upgrade their knowledge and skills. Many farmers are increasing their area under lavender farming in the area. Value addition in lavender crop can open some new income and employment avenues in the region. There is an immense scope in lavender Farming in J&K. This sector has an export opportunities. More research and extension are required to expand area and number of farmers of lavender farming in the region. If grown commercially and in a scientific way, lavender farming can be a boon to the farmers of the region.

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Women who value themselves earn respect, think for themselves, and make smart choices

■ SURJIT FLORA

As Valentine's Day is just around the corner, all men, and especially lovers, need to know that the chocolates, flowers, and romantic dinners are wonderful, yet what women truly desire is the assurance that they are loved and valued. It's not about their appearance or physique. Your love for them is unconditional, simply for who they are.

While considering what women desire on Valentine's Day, it is crucial to acknowledge that individual preferences can differ significantly from one person to another. Nonetheless, there exist several prevalent aspirations and anticipations that numerous women might hold. Here are several suggestions: These suggestions include valuing

moments and focus, unexpected delights and affectionate acts, significant presents, adaptability, and comprehension.

Women deserve respect as they are individuals with inherent dignity. The majority have been utilized as a commodity.

They are entitled to fundamental rights and dignity. Do not undervalue their contributions. In the roles of a mother, a sister, a wife, a companion, a daughter, and a worker.

The empowerment of women is a powerful force. A household in which a woman is insulted, humiliated for her appearance, and betrayed will never experience true stability or prosperity.

May that dwelling be blessed where a distinguished woman is held in esteem, and her choices are regarded

with significance.

Indeed! Appreciation demonstrates respect for a man. Appreciation reflects a deep sense of respect. Both women and men require respect and appreciation, yet the expression of respect for a man differs from that for a woman.

When a woman respects a man, she accepts him and loves him for who he is, flaws and all-even when it conflicts with what she wants. Embracing a man for his true self strengthens his identity as a man. It also gives her strength. When a woman is emotionally healthy, embracing a man can be seamless, as love and nurturing flow naturally from her. Her actions, grounded in love rather than control, inspire him to be the best version of himself as a man.

It is believed that when a man's natural way of being often clashes with a woman's desires, the solution is not for her to criticize or pressure him to change into someone he is not. The next step is to ascertain if the couple qualifies as a "match." It's quite common for women to concentrate on their own wants, fears, worries, and desires, often overlooking how he feels and experiences life, particularly since men tend to express their deep emotions in a more stoic manner.

Men generally do not convey negative emotions. Women may perceive their silence, stemming from a lack of expression regarding the negative, as either an agreement with their desires or a sign of indifference. They ought to see their silence as a form of restraint and strength, rec-

ognizing and valuing that he also experiences deep feelings, has emotional needs, and possesses his own viewpoint. On a deeper level, embracing and valuing a man signifies embracing and respecting his essence.

A woman who genuinely respects herself understands her worth. She recognizes her value as elevated. She will not permit others to treat her in ways that undermine her worth. If her partner shows her less care and concern than she offers in return, she will end the relationship and seek someone more deserving.

A woman who genuinely values herself will set goals. The specifics will differ from one woman to another, yet they will focus on their individual experiences. These will be accomplishments that the woman can take

pride in, earned solely through her perseverance, dedication, and/or skill.

A woman who genuinely values herself will also make decisions that prioritize her own well-being. The manifestation of this varies for each woman based on her individual goals; for a college student, it might take the shape of consistent studying and daily exercise. For a businesswoman, it may be submitting impressive work and engaging with superiors. For an expectant mother, it may involve exploring neonatal care and maintaining a nutritious diet.

Women who value themselves deserve respect, think independently, and act advantageously.

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