

Cumin variety CZC 94 – potential game changer for cumin cultivation in arid regions

India is leader in Cumin (*Cuminum cyminum* L.) production and export. Indian cumin export has increased ten times in the past decade reaching to INR 42531 million in year 2021. Increasing demand of cumin seed in international market is boom for the Indian farmers. Cumin plant need cool dry weather for healthy growth. Terminal heat stress prevailing in arid regions also reduces productivity. Cumin cultivation dominated by variety GC 4 calls for varietal diversification in cumin.

Cumin cultivation needs 4-5 irrigations during 120-135 days crop duration. ICAR-CAZRI, Jodhpur has developed short duration cumin genotype 'CZC-94' showing earliness in flowering (40-42 days) and maturity (100-105 days). Shorter maturity duration favors timely sowing-early harvest and late sowing-timely harvest models. CZC-94 is a win-win option for both crop and growers. Shorter duration may also allow cumin spread in non-conventional dry areas with short cold duration. In *Rabi* 2021-22, CZC -94 was commercially cultivated by 15 cumin growers of arid regions. Farmers response was encouraging, farmers are highly convinced by the under mentioned benefits of CZC 94 shorter duration over the existing cultivars.

CZC 94 not only requires less irrigation/water and time in germination but also requires only 3 irrigations after germination to harvest thus saving 1-2 irrigations. Land holding are large in the arid regions, with limited water availability coupled with limited hours of electricity supply. These constrains limits cropping intensity, farmer can increase the area of cumin cultivation with CZC-94 as it can be sown up to mid-December without reduction in yield.

Cumin cultivation require 3-4 prophylactic pesticide sprays to manage *Alternaria* blight disease but CZC 94 being short duration remains for less period in field thus demanding 2-3 pesticide sprays only, therefore reduces cultivation cost and increases chances of having produce with minimum pesticide residue.

Cumin crop productivity is significantly reduced by abrupt occasional increase in day temperature and dry winds in Feb- March months, but CZC-94 escapes the terminal heat stress encountered during maturity causes forced senescence. Over the years, the western disturbances causing untimely winter rains or cloudy weather at flowering and post flowering stage has become a normal phenomenon; CZC 94 earliness shows better adaptation to climatic vagaries at it escapes the risky period by running fast for maturity by mid of Feb month.

Cumin is a leading cash crop for arid region farmers, early harvest from CZC 94 cultivation can fetch higher price in open market and early cash in hands for CZC 94 growers.



