

An Overview of Wheat Seed Gall Nematode (*Anguina tritici*)

(* Ramavath Abhi and Manisha)

Research Scholar, Department of Nematology,
Rajasthan College of Agriculture, MPUAT, Udaipur-313001, Rajasthan, India

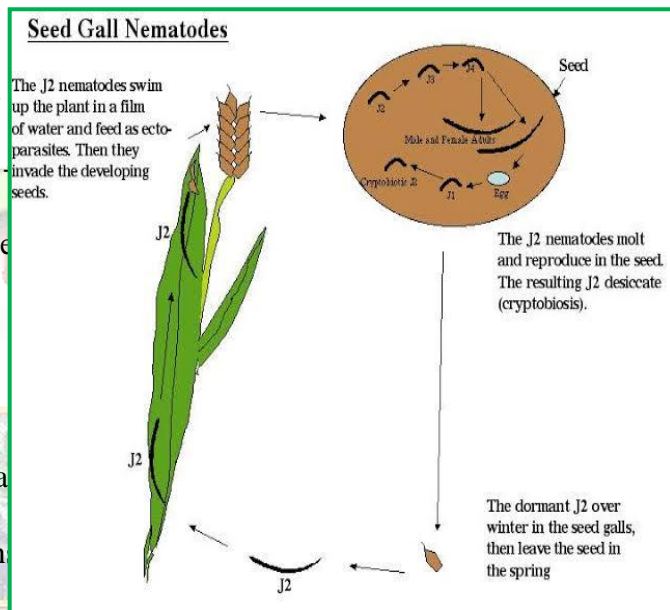
*Corresponding Author's email: ramavathabhi1401@gmail.com

- *Anguina* is derived from Latin word: *Anguinos*-snake like; the specific name after host *Triticum aestivum*.
- The first plant parasitic nematode - T Needham (1743) England.
- In India Milne reported it for the first time from Punjab in 1919.

Economic Loss: 20-50%

Biology and Life Cycle

- Parasite of above-ground parts
- Source of infection -seed material contaminated with cockles
- Each seed gall (cockle) contain 10000-30000 J2 in quiescent stage
- Gain moisture in soil, become active and come out into soil
- Ascend the growing point of germinating seedlings
- Feed ecto-parasitically between leaf sheaths and growing point till ear head emergence
- Carried up along the growing plant, shielded among young leaves surrounding growing point
- Enter in floral primordia at the time of ear head formation - Endo-parasite
- Ear heads emerge, nematodes moult quickly to adults inside green galls
- Gall may contain several adults, mate inside, females lay eggs, fecundity high
- Eggs hatch into J2, and become quiescent inside the gall as the crop matures
- One life cycle in a season (Univoltine)
- Survive in adverse condition (Quiescent stage 28-32 years)



Symptoms

- Name of the disease - Gegla, Sehun, Mamni, Ear cockle.

- Basal swelling of stem at 20-25 days
- Crinkling, curling and twisting of leaves
- Stunting and prostrate growth of the crop
- Increased tillering
- Ear head formation postponed
- Affected ear heads are shorter and broader
- Glumes arranged loosely
- Galls replace the seeds

Interaction with Bacteria

- *Anguina tritici* + *Clavibacter tritici* = Tundu disease or Yellow ear rot.
- Nematode acts as vector of bacteria
- Low temperature and High humidity favour disease
- Yellow slimy ooze on plant parts
- No grain formation
- Ear heads may not emerge from boot leaf
- Tundu is more damaging than ear cockle

Management

- Separation of cockles from seed & Dry cleaning, Winnowing/Fanning
- Use of certified seeds or resistant varieties – Kanrad, AUS-15854, WH-0542.
- Brine solution treatment (10-20%) of seeds
- Seed treatment with hot water at 54°C for 10-15 minutes
- Crop rotation with non-host crops like mustard, garlic, fenugreek, onion, carrot etc.