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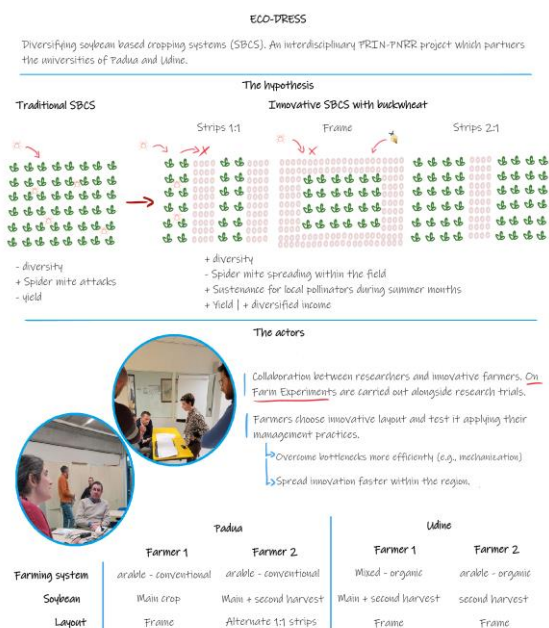
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## A collaborative approach to diversified soybean-based cropping system: design of four OFE in North-Eastern Italy (Poster #318)

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In Italy, soybean is mainly cropped in Veneto and Friuli Venezia Giulia accounting 2/3 of the national surface. In these areas, soybean-based cropping systems (SBCS) appeared to be poorly diversified where soybean is cropped since long term, thus it is vulnerable to both abiotic and biotic stresses hampering its productivity. Indeed, a serious issue is represented by the two-spotted spider mite, *Tetranychus urticae* Koch, which is a polyphagous pest mite characterized by short life span, high fecundity and ability to develop resistance to many acaricides. Another pest affecting soybean is the invasive brown marmorated stink bug *Halyomorpha halys* (Stål), able to feed on different aboveground soybean tissues preferring the pods where they induce seed damage with yield loss.

The ECO-DRESS project aims at re-designing SBCS testing alternative patterns of strip cropping with *Fagopyrum esculentum* (buckwheat), a pseudo-cereal characterized by fast germination, fast growth and soil cover. It is commonly used for its allelopathic properties against weeds and as nectar provisioning plant host of parasitoids.

The researchers have designed three different SBCS based on different intercropping schemes of soybean and buckwheat according to different hypothesis of soybean production and pest control to be tested in their experimental farms in Veneto and Friuli Venezia Giulia regions: 1) alternate strips of soybean-buckwheat (1:1), narrow strips of buckwheat in soybean fields (2:1) to maintain a dominant production of soybean, soybean framed by buckwheat to control the two-spotted mite. Moreover, a group of farmers experienced in soybean or

buckwheat cropping have been invited, in both regions, to participate to a meeting with a presentation of the ECO-DRESS project and discussion of possible design of similar experiments in their farms. Main points of discussion were the sowing date of the experiments (soybean/buckwheat as main crops or double crop), the seeds to be used (same cultivars provided by scientists or own cultivars), how to manage the harvest of the two crops, the experimental layout to implement (Figure 1). After the discussion, for each region, two farmers were selected for hosting 'on-farm experimentation' (OFE) about the introduction of innovative SBCS promoted by the project. More specifically, after having known all the different SBCS, each of them with the help of researchers tried to identify the most suited to his farm. After that, some meetings were organized in order to discuss how properly tailoring the SBCS selected to the farm machinery, the fields location and the farm business as usual. The OFE will be carried out in 2024 and 2025.