



# 271– Winter cover crops for ecological weed management in vegetable production

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## INTRODUCTION

Conservation Agriculture (CA) reduces the environment impact to avoid erosion, improving soil health on the attributes of chemical, physical and biological besides to suppress weeds ecologically. Notwithstanding CA has been aroused interest of organic grower owing this methodology increase soil organic matter and provide ecological mechanisms to manage weeds without needs to harrowing and ploughing. So, this research aimed study cover crops species killed mechanically with roller crimper for ecological weeds control.

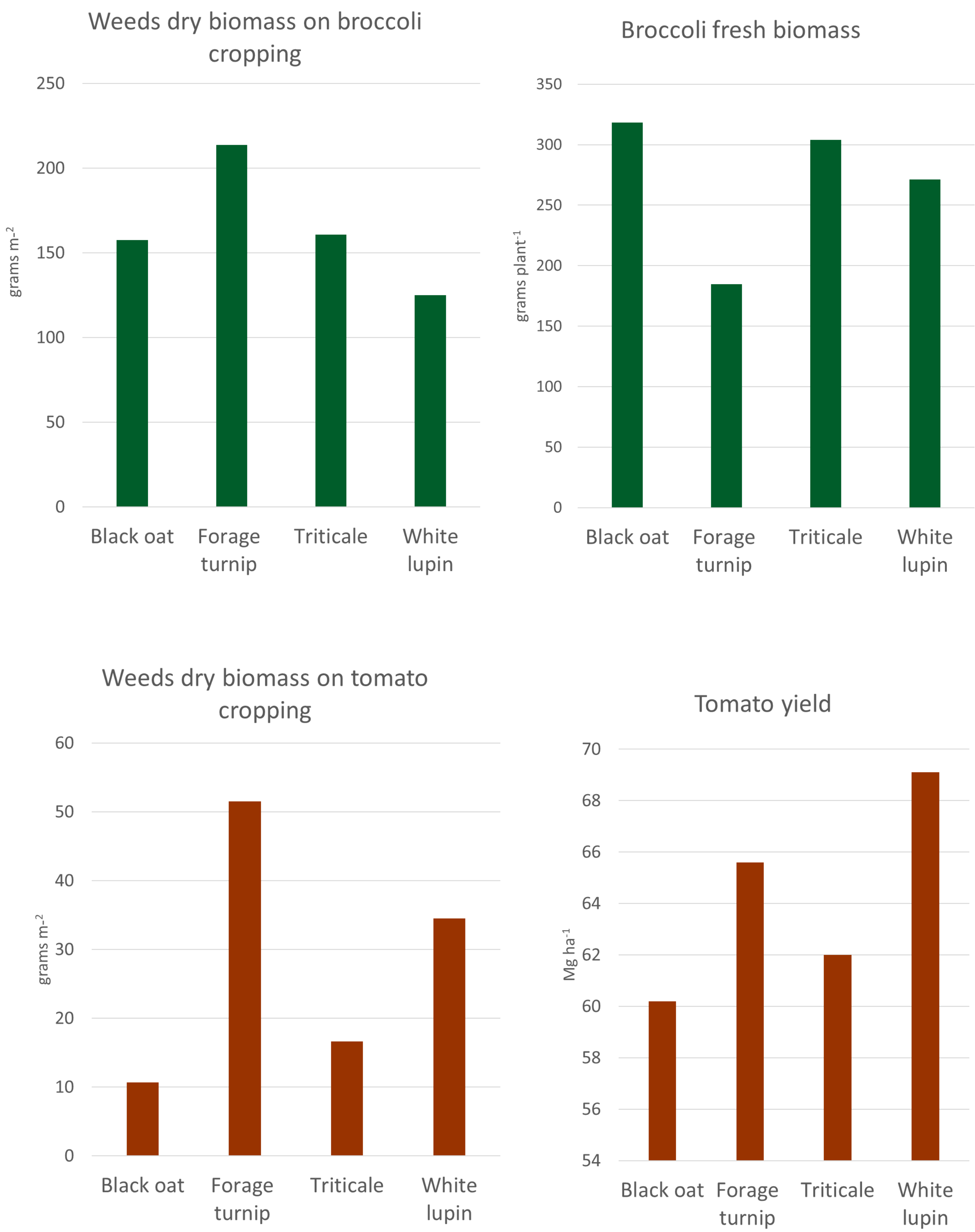
## METODOLOGY

The experiment was set up in Ribeirão Preto, SP, Brazil in a Oxisoil with clay texture in tropical condition. Black oat (*Avena strigosa* Schreb), forage turnip (*Raphanus sativus* L.), triticale (× *Triticosecale* Wittmack) and white lupin (*Lupinus albus*) composed the experimental treatments. The treatments were arranged in randomized block with four replications in each year 2019 and 2020 for growing broccoli and tomato, respectively, on the straw of cover crops. At the end of the cycle, around 70 days after sowing, cover crops were killed mechanically with roller crimper for after vegetable growing. It was evaluated the weed establishment and vegetable performance.



## RESULTS AND DISCUSSION

The cover crops yielded average 3.6 Mg ha<sup>-1</sup> of aboveground dry biomass, with no difference statistic among them. Black oat, triticale and white lupin were more efficient to weed suppress than forage turnip in both broccoli and tomato growing. Broccoli grew better on black oat straw followed by triticale and white lupin, however broccoli marketable yield was similar among cover crops. The aboveground growth of tomato was similar among cover crops, however tomato yield was better on white lupin straw but without differ from forage turnip. Concluding, the strategy for weed control with cover crops killed mechanically by roller crimper is highly hopeful for vegetable organic growing under CA technology.



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