OPEN ACCESS Freely available online

ISSN: 2168-9881
Agrotechnology

Commentary

Management of Double Cropping Systems for Increasing Cropping Intensity

Pablo Monzon*

Department of Crop Science, University of Hohenheim, Stuttgart, Germany

DESCRIPTION

To increase the phyto-extraction potency of HMs from contaminated soil and the development of agriculture crops, the twin cropping pattern (growing hyper accumulator plants along with low accumulating crops) was established. The interplay between the co-occurring plant species and the sort of metals present on the site, however, has a significant impact on the planting's production. Where the rainy seasons are long enough or irrigation is practical, multiple cropping is a frequent and widely used land use management approach in low-land tropical and subtropical agriculture. Crop output is related to changes in cropping intensity, not merely in harvested area and crop yields.

In this system, plants work together to share nutrients and display symbiotic relationship, which helps the plants support one another. Normally, the co-cropped plant species' microorganisms and root exudates promote growth and metal absorption. Therefore, *S. nigrum's* ability to extract phytochemicals can be useful in ways other than only being enhanced by co-growing with particular species like rye grass. *S. nigrum* has a higher ability (hyper-accumulator) than rye grass (low accumulator) to remove accessible Cd and/or other HMs from soil. Similar results were obtained when *S. nigrum* was intercropped with Welsh onions and Chinese cabbage. Therefore, it is advantageous and cost-effective to employ this pattern in phyto-remediation of Cd-containing soils through the accumulation of bio-available Cd in *S. nigrum* biomass, which renders the soil Cd-free and enables farmers to continue planting crops during the remediation phase without having to wait for the decontamination stage.

Multiple cropping also enables risk-spreading and diversification to various growing seasons and different crops for one's own use or for markets in a cropping system with a variety of crop species. Though these issues are crop-, location-, and management-specific, planting a second or third crop can raise the chance of crop failure and the environmental costs of production. In order to achieve the same degree of cropping intensity, i.e., the same ratio of harvested area to physical area or the same number of harvests, crop diversification and intensification are two distinct management techniques with different purposes. Assessments of global food production and land use change do not adequately account for multiple cropping systems, and global agricultural models do not take into account the effects of multiple cropping on crop production, ground cover, water fluxes, soil erosion, albedo, soil chemical properties, and pest infestation. On the field and farm size, feedbacks between various plants, crops, and microorganisms that directly or indirectly contribute to food production are significant, but it is uncertain how these feedbacks affect greater geographical scales.

Methodological methods to date have included non-remote sensing techniques, non-remote sensing approaches and combinations of remote sensing data with agricultural census data. All of them produce accurate estimates of the area used for numerous crops or the timing of the crop cycles in various cropping systems, albeit not both at once. Developed for use on a worldwide scale and for farmland in America, Europe, and Asia, remote sensing technologies may detect phonological cycles, the greening up, peak phase, and maturity from time series of vegetation indices like NDVI and EVI as well as crop classes. Without professional knowledge of the local to regional agricultural practices or ground-truth data, they cannot recognize specific crops or crop sequences. Short-wave infrared satellite pictures can only be used to identify paddy rice agriculture at the individual crop level because it mimics a distinct temporal pattern of flooding/rice transplanting period, growth period, and fallow period after harvest.

Additionally, radar imaging technologies have shown to be effective in mapping rice-growing regions and have the benefit of not being constrained by cloud cover. Often, it takes more information to identify different annual crops or cropping systems, such as crop calendars, high-resolution photography, field data, expert knowledge, or other ground truth data. Due to trade-offs between spatial resolution and area coverage, crop identification from satellite pictures is difficult. Small field sizes also call for photographs of medium to high quality, although they frequently lack temporal detail. As a result, signals obtained from remote sensing data frequently reflect a variety of crop kinds, necessitating the use of multi-temporal techniques or

Correspondence to: Pablo Monzon, Department of Crop Science, University of Hohenheim, Stuttgart, Germany, E-mail: pabmonz@hm.edu.de

Received: 30-Nov-2022, Manuscript No. AGT-22-19263; **Editor assigned:** 02-Dec-2022, PreQC No. AGT-22-19263; **Reviewed:** 16-Dec-2022, QC No. AGT-22-19263; **Revised:** 23-Dec-2022, Manuscript No. AGT-22-19263; **Published:** 30-Dec-2022, DOI:10.35248/2168-9891.22.11.297

Citation: Monzon P (2022) Management of Double Cropping Systems for Increasing Cropping Intensity. Agrotechnology. 11:297

temporal "un-mixing" to map several crops simultaneously. However, these approaches have not yet been used on wider geographical scales. Using gridded farmland data and national cropland data from the FAO, cropping or harvest intensity, the ratio of area harvested to physical area has been plotted on a worldwide basis. Other methods for regional or crop-specific data sets include combining agricultural census data from China and India with remote sensing, as well as using farmer-reported planting and harvesting dates from household surveys and national crop calendars.