

عنوان مقاله:

Evaluation of the field performance of partially swerved double tines subsoiler in two different soil textures and two levels of moisture contents(Part1)The draft force requirement and disturbed area

محل انتشار:

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خلاصه مقاله:

Two experiments were conducted in two sites of silt clay texture on two subsoiler combinations one of them was single tine and the other double tines. The double tines were longitudinally and swiveled arrangement. The experiments parameters were two subsoiler types, two sites and four operating depths (30, 40, 50 and 60cm). The experiments were conducted to evaluate the draft force requirement and the disturbed area by the subsoiler types. The results of the double tines subsoiler were compared to that with of the single tine to determine the superiority of the first subsoiler on the second one. The results showed that the draft force requirement of both subsoiler combinations increased as the operation depth increased ($p<0.01$). The draft force requirement of SS was higher than that for S ($p<0.01$) by 34.95% and 29.65% in site1 and site2 respectively. The highest values were recorded for the operating depth (60cm) which they are 41.33kN and 36.01kN in site1 and site 2 respectively. The addition of the wings to S and SS increased the draft force requirement. The effect of the operating depth on the draft requirement is greater than adding wings to both subsoiler combinations. The disturbed area by S and SS increased considerable ($p<0.01$) with increasing the operating depth and adding wings in both sites. SS increased the disturbed area by 74.58% and 76.09% compared with S in site1 and site2 respectively. The values of the disturbed area of SS are 0.7 and 0.54m² in the two sites respectively. The addition of the wings to SS increased the disturbed area by 200% compared with S.

کلمات کلیدی:

draft force, disturbed area, double tine subsoiler=SS, Single tine subsoiler=S

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